

Curriculum Vitae

**Werner Sieghart**

---

**Personal Data**

---

Date of Birth	November 26, 1945
Place of Birth	Pilsen, CSR
Nationality	Austrian

---

**Education**

---

1955 - 1963	secondary school, Bundesrealgymnasium Wien X, Ettenreichgasse
1963 - 1969	study of chemistry at the University of Vienna
1969 - 1973	graduate study in biochemistry, Inst. f. Biochemistry, Univ. Vienna, with Prof. Dr. Hans Tuppy
1973	January 30, Ph.D.

---

**Career History**

---

1973 - 1976	post doc, Section Biochem. Psychiatry, Univ. Clinic for Psychiatry, Vienna, with Prof. Dr. Manfred Karobath
1976 - 1977	post doc at the Dept. Pharmacology, Yale Univ. with Prof. Dr. Paul Greengard
1977 - 1978	research associate, Dept. Pharmacol., Yale Univ., with P. Greengard
1978 - 1982	university assistant, Section Biochem. Psychiatry, Univ. Clinic for Psychiatry, Vienna
1980 - 2001	Chief, Section Biochem. Psychiatry, Univ. Clinic for Psychiatry, and of the Clinical Chemistry Lab of this Univ. Clinic, performing drug of abuse-, lithium-, hormone-, and anticonvulsant-determinations
1982	Habilitation,
1988	Prof. for Neurobiochemistry
2002 - present	Prof. for Biochem. & Mol. Pharmacol., and Head, Division for Biochem. Mol. Biol. , Center for Brain Research, Medical Univ. Vienna

---

**Awards**

---

1976	Max Kade fellowship
1981	Hoechst award
1984	Sandoz award for Biology
1996, 1998, 2001	Schizophrenia award, Sect. Psychiatry, Austrian Soc. Neurol. Psych.
2000	Research award of the AGNP and the Austr. Soc. Neurol. Psychiatr.

## **Publications (April 2008)**

---

216 original publications

11 reviews

31 proceedings

9 invited book articles

452 abstracts

119 invited lectures

2 patents

---

### **W. Sieghart, 180 publications 1973-2002**

## **List of publications in scientific journals**

1. Tuppy H., and Sieghart W. (1973) Einfluß von Co<sup>2+</sup> auf Hefemitochondrien. *Monatshefte für Chemie* 104, 1433-1443.
2. Sieghart W., and Karobath M. (1974) Evidence for specific synaptosomal localization of exogenous accumulated taurine. *J. Neurochem.*, 23, 911-915.
3. Schmid R., Sieghart W., and Karobath M. (1975) Taurine uptake in synaptosomal fractions of rat cerebral cortex. *J. Neurochem.*, 25, 5-9.
4. Sieghart W., and Karobath M. (1976) Uptake of taurine into subcellular fractions of C-6 glioma cells. *J. Neurochem.*, 26, 981-986.
5. Sieghart W., Leitich H., and Karobath M. (1976) Subcellular distribution of dopamine-sensitive adenylate cyclase. *Brain Res.*, 109, 418-422.
6. Sieghart W., and Heckl K. (1976) Potassium evoked release of taurine from synaptosomal fractions of rat cerebral cortex. *Brain Res.*, 116, 538-543.
7. König P., Kriechbaum, G., Presslich O., Schubert H., Schuster P., und Sieghart W. (1977) Orale Taurinmedikation bei therapieresistenten Epilepsien. *Wiener Klin. Wochenschrift* 89, 111-113.
8. Sieghart W., Sellström A., and Henn F. (1978) Sedimentation characteristics of subcellular vesicles derived from three glial systems. *J. Neurochem.*, 30, 1587-1589.
9. Sieghart W., Theoharides Th.C., Alper S.L., Douglas W.W., and Greengard P. (1978) Calcium dependent protein phosphorylation during secretion by exocytosis in the mast cell. *Nature* 275, 329-331.
10. Sieghart W., Forn J., Schwarcz R., Coyle J.T. and Greengard P. (1978) Neuronal localization of specific brain phosphoproteins. *Brain Res.*, 156, 345-350.
11. Sieghart W., Forn J., and Greengard P. (1979) Calcium and cyclic AMP regulate the phosphorylation of same two membrane-associated proteins specific to nerve tissue. *Proc. Nat. Acad. Sci., USA*, 76, 2475-2479.
12. Sieghart W., and Singer E. (1979) Sedimentation and release properties of glial particles present in P<sub>2</sub>-fractions isolated from rat cerebral cortex.

- Brain Res.*, 170, 203-208.
- 13. Walter U., Lohmann S.M., Sieghart W., Greengard P. (1979) Identification of the cyclic AMP-dependent protein kinase responsible for endogenous phosphorylation of substrate proteins in synaptic membrane fractions from rat brain. *J. Biol. Chem.*, 254, 12235-12239.
  - 14. Placheta P., Singer E., Sieghart W., and Karobath M. (1979) Properties of [<sup>3</sup>H]taurine release from crude synaptosomal fractions of rat cerebral cortex. *Neurochem. Res.* 4, 703-712.
  - 15. Theoharides Th.C., Sieghart W., Greengard P., and Douglas W.W. (1980) Antiallergic drug cromolyn may inhibit histamine secretion by regulating phosphorylation of a mast cell protein. *Science* 207, 80-82.
  - 16. Sieghart W., Schulman H., and Greengard P. (1980) Neuronal localization of Ca<sup>2+</sup>-dependent protein phosphorylation in brain. *J. Neurochem.*, 34, 548-553.
  - 17. Sieghart W., and Karobath M. (1980) Molecular heterogeneity of benzodiazepine receptors. *Nature* 286, 285-287.
  - 18. Langer G., Karobath M., Sieghart W., Aschauer H., Placheta P. ,and Spona J. (1981) Effects of antidepressant drug treatment (clomipramine) on hormonal responses to thyrotropin-releasing hormone and insulin-induced hypoglycemia in depressed patients. *Pharmakopsychiatrie* 14, 100-106.
  - 19. Theoharides Th.C., Sieghart W., Greengard P., and Douglas W.W (1981) Somatostatin-induced phosphorylation of mast cell proteins. *Biochem. Pharmacol.*, 30, 2735-2736.
  - 20. Sieghart W., Theoharides Th.C., Douglas W.W., and Greengard P. (1981) Phosphorylation of a single mast cell protein in response to drugs that inhibit secretion. *Biochem. Pharmacol.*, 30, 2737-2739.
  - 21. Sieghart W. (1981) Glutamate stimulated phosphorylation of a specific protein in P<sub>2</sub>-fractions of rat cerebral cortex. *J. Neurochem.* 37, 1116-1124.
  - 22. Rumpold H., Frass M., Sieghart W., and Müller M.M. (1981) Enzymimmunologische Bestimmung der Antiepileptika (Methodenvergleich). *Berichte der ÖGKC*, 4, 76-77.
  - 23. Singer E.A., Sieghart W., and Placheta P. (1981) Sedimentation and release properties of P<sub>2</sub>-fractions derived from rat cerebral cortex slices incubated with radiolabeled GABA for a short or long time period. *Neurochem. Res.*, 6, 1193-1203.
  - 24. Sieghart W., Drexler G., Supavilai P. and Karobath M. (1982) Properties of benzodiazepine receptors in rat retina. *Exp. Eye Res.* 34, 961-967.
  - 25. Sieghart W., and Möhler H. (1982) [<sup>3</sup>H]clonazepam like [<sup>3</sup>H]flunitrazepam is a photoaffinity label for the central type of benzodiazepine receptors. *Eur. J. Pharmacol.*, 81, 171-173.
  - 26. Sieghart W. and Mayer A. (1982) Postnatal development of proteins irreversibly labeled by [<sup>3</sup>H]flunitrazepam. *Neurosci. Letters* 31, 71-74.
  - 27. Sieghart W., Mayer A., and Drexler G. (1983) Properties of [<sup>3</sup>H]flunitrazepam binding to different benzodiazepine binding proteins. *Eur. J. Pharmacol.* 88, 291-299.
  - 28. Sieghart W., and Drexler G. (1983) Irreversible binding of [<sup>3</sup>H]flunitrazepam to different proteins in various brain regions. *J. Neurochem.* 41, 47-55.
  - 29. Sieghart W. (1983) Several new benzodiazepines selectively interact with a benzodiazepine receptor subtype. *Neurosci. Letters* 38, 73-78.
  - 30. Dennig G., and Sieghart W. (1984) Apparent identity of α-subunit of pyruvate dehydrogenase and the protein phosphorylated in the presence of glutamate in P<sub>2</sub>-fractions of rat cerebral cortex. *J. Neural Transmission* 59, 119-132.
  - 31. Drexler G. and Sieghart W. (1984) Properties of a high affinity binding site for [<sup>3</sup>H]avermectin B<sub>1a</sub>. *Eur. J. Pharmacol.* 99, 269-277.

32. Drexler G. and Sieghart W. (1984) Evidence for association of a high affinity avermectin binding site with the benzodiazepine receptor. *Eur. J. Pharmacol.* 101, 201-207.
33. Möhler H., Sieghart W., Richards J.G. and Hunkeler W. (1984) Photoaffinity labeling of benzodiazepine receptors with a partial inverse agonist. *Eur. J. Pharmacol.* 102, 191-192.
34. Drexler G. and Sieghart W. (1984) [<sup>35</sup>S]t-butylbicyclicphosphorothionate and avermectin bind to different sites associated with the GABA-benzodiazepine receptor complex. *Neurosci. Letters* 50, 273-277.
35. Sieghart W. and Schuster A. (1984) Affinity of various ligands for benzodiazepine receptors in rat cerebellum and hippocampus. *Biochem. Pharmacol.* 33, 4033-4038.
36. Eichinger A. and Sieghart W. (1984) Photoaffinity labeling of different benzodiazepine receptors at physiological temperature. *J. Neurochem.* 43, 1745-1748.
37. Sieghart W. (1985) Benzodiazepine receptors: multiple receptors or multiple conformations? *J. Neural Transmission* 63, 191-208. **Review**
38. Sieghart W. (1985) Binding of various benzodiazepine receptor ligands to different benzodiazepine receptor subtypes. *Pharmacopsychiat.*, 18, 160-162. **Review**
39. Eichinger A. and Sieghart W. (1985) Differential degradation of different benzodiazepine binding proteins by incubation of membranes from cerebellum or hippocampus with trypsin. *J. Neurochem.* 45, 219-226.
40. Sieghart W., Eichinger A., Riederer P., Jellinger K. (1985) Comparison of benzodiazepine receptor binding in membranes from human or rat brain. *Neuropharmacol.* 24, 751-759.
41. Saletu B., Grünberger J. and Sieghart W. (1985) Nocturnal traffic noise, sleep, and quality of awakening: neurophysiologic, psychometric, and receptor activity changes after quazepam. *Clin. Neuropharmacol.* 8, Suppl. 1, 574-590.
42. Sieghart W., Drexler G. and Saletu B. (1986) Bestimmung der Pharmakokinetik verschiedener Benzodiazepine mit Hilfe einer Rezeptorbindungs methode. *Laboratoriumsmedizin* 10, 7-12
43. Sieghart W. (1986) Methodik und Problematik der Suchtgiftuntersuchungen *Wiener Klin. Wochenschrift* 13, 411-416
44. Sieghart W. (1986) Richtlinien zur Durchführung und Interpretation von Suchtgift untersuchungen im Harn. *Wiener Zeitschrift für Suchtforschung* 9, 15-21.
45. Eichinger A. and Sieghart W. (1986) Postnatal development of proteins associated with different benzodiazepine receptors. *J. Neurochem.* 46, 173-180.
46. Resch F., Langer G., Koinig G., Dittrich R. und Sieghart W. (1986) Vergleich der Bioverfügbarkeit von zwei Diazepam-Zubereitungen. *Arzneimittelforschung/Drug Res.* 36, 735-738.
47. Sieghart W. (1986) Comparison of benzodiazepine receptors in cerebellum and inferior colliculus. *J. Neurochem.* 47, 920-923.
48. Dietzel M., Saletu B., Lesch O.M., Sieghart W. and Schjerve M. (1986) Light treatment in depressive illness; polysomnographic, psychometric and neuroendocrinological findings. *Europ. Neurol.* 25, 93-103.
49. Langer G., Koinig G., Hatzinger R., Schönbeck G., Resch F., Aschauer H., Keshavan M.S., and Sieghart W. (1986) The response of thyrotropin to thyrotropin-releasing hormone as predictor of treatment outcome. *Arch. Gen. Psychiatry* 43, 861-869.
50. Drexler G., Eichinger A., Wolf Ch. and Sieghart W. (1986) A rapid and simple method for efficient coating of microtiter plates using low amounts of antigen in the presence of detergent. *J. Immunol. Methods* 95, 117-122.

51. Saletu B., Grünberger J., and Sieghart W. (1986) Pharmaco-EEG, behavioral methods and blood levels in the comparison of temazepam and flunitrazepam. *Acta Psychiatr. Scand. Suppl.* 332, Vol. 74, 67-94.
52. Sieghart W., Eichinger A., Richards J.G. and Möhler H. (1987) Photoaffinity labeling of benzodiazepine receptor proteins with the partial inverse agonist [<sup>3</sup>H]Ro15-4513; a biochemical and autoradiographic study. *J. Neurochem.* 48, 46-52.
53. Sieghart W., Ronca E., Drexler G. and Karall S. (1987) Improved radioimmunoassay of melatonin in serum. *Clin. Chem.*, 33, 604-605.
54. Lesch O.M., Musalek M., Auff E., Dietzel M., Lovrek A., Ronovsky K.H., Sieghart W., Walter H. and Werner U. (1987) Behandlung von Bewegungsstörungen bei "tardiver Dyskinesie" und "Chorea Huntington" mit einer neuen alpha-adrenerg wirksamen Substanz - BHT 920. *Neuropsychiatrie* 1, 49-53.
55. Sieghart W., Eichinger A. and Zezula J. (1987) Comparison of tryptic peptides of benzodiazepine binding proteins photolabeled with [<sup>3</sup>H]flunitrazepam or [<sup>3</sup>H]Ro15-4513. *J. Neurochem.* 48, 1109-1114.
56. Sieghart W. and Fuchs K. (1988) Modification of the apparent molecular weight of different benzodiazepine binding proteins from rat brain membranes by various endoglycosidases. *Neurosci. Letters* 86, 213-218.
57. Saletu B., Anderer P., Kinsperger K., Grünberger J., and Sieghart W. (1988) Comparative bioavailability studies with a new mixed-micelles solution of diazepam utilizing radioreceptor assay, psychometry and EEG brain mapping. *Internat. Clin. Psychopharmacol.* 3, 287-323.
58. Fuchs K., Möhler H. and Sieghart W. (1988) Various proteins from rat brain, specifically and irreversibly labeled by [<sup>3</sup>H]flunitrazepam, are distinct alpha subunits of the GABA-benzodiazepine receptor complex. *Neurosci. Letters* 90, 314-319.
59. Aschauer H.N., Schönbeck G., Langer, G. Koinig, F. Resch, R. Hatzinger, H.R. Choudry, and Sieghart W. (1988) Plasma concentration of haloperidol and prolactin and clinical outcome in acutely psychotic patients. *Pharmacopsychiatry* 21, 246-251.
60. Sieghart W. (1988) Comparison of two different benzodiazepine binding proteins by peptide mapping after limited proteolysis. *Brain Res.* 450, 387-391.
61. Fuchs K. and Sieghart W. (1989) Evidence for the existence of several different  $\alpha$ - and  $\beta$ -subunits of the GABA-benzodiazepine receptor complex from rat brain. *Neurosci. Letters* 97, 329-333.
62. Sieghart W. (1989) Multiplicity of GABA-A-benzodiazepine receptors. *Trends Pharmacol. Sci.* 10, 407-411. **Review**
63. Fuchs K., Adamiker D. and Sieghart W. (1990) Identification of  $\alpha_2$ - and  $\alpha_3$ -subunits of the GABA-A-benzodiazepine receptor complex purified from the brains of young rats. *FEBS-Letters* 261, 52-54.
64. Sieghart W. and Schlerka W. (1991) Potency of several type I-benzodiazepine receptor ligands for inhibition of [<sup>3</sup>H]flunitrazepam binding in different rat brain tissues. *Europ. J. Pharmacol.* 197, 103-107.
65. Zimprich F., Zezula J., Sieghart W. and Lassmann H. (1991) Immunohistochemical localization of the  $\alpha_1$ -,  $\alpha_2$ - and  $\alpha_3$ -subunit of the GABA-A receptor in the rat brain. *Neurosci. Letters* 127, 125-128.
66. Zezula J. and Sieghart W. (1991) Isolation of type I and type II GABA-A-benzodiazepine receptors by immunoaffinity chromatography. *FEBS-Letters* 284, 15-18.
67. Buchstaller A., Adamiker D., Fuchs K. and Sieghart W. (1991) N-Deglycosylation and immunological identification indicates the existence of  $\beta$ -subunit isoforms of the rat GABA-A receptor. *FEBS-Letters* 287, 27-30.

68. Buchstaller A., Fuchs K., and Sieghart W. (1991) Identification of  $\alpha_1$ -,  $\alpha_2$ - and  $\alpha_3$ -subunit isoforms of the GABA-A-benzodiazepine receptor in the rat brain. *Neurosci. Letters* 129, 237-241.
69. Sieghart W. (1991) Proposal of a new GABA-A-benzodiazepine receptor nomenclature based on the subunit composition of GABA<sub>A</sub> receptors. *Europ. Neuropsychopharmacol.* 1, 286-288.
70. Loimer N., Sieghart W., Lenz K., Presslich O. (1991) Flumazenil failed to rapidly terminate midazolam anesthesia in an opiate addict. *Ann. Clin. Psychiat.* 3, 137-139.
71. Zezula J., Fuchs K. and Sieghart W. (1991) Separation of  $\alpha_1$ -,  $\alpha_2$ - and  $\alpha_3$ -subunits of the GABA-A-benzodiazepine receptor complex by immunoaffinity chromatography. *Brain Res.* 563, 325-328.
72. Sieghart W. (1992) Molecular basis of pharmacological heterogeneity of GABA-A receptors. *Cellular Signalling* 4, 231-237. **Review**
73. Sieghart W. (1992) GABA-A receptors: ligand-gated Cl<sup>-</sup> ion channels modulated by multiple drug binding sites. *Trends in Pharmacol. Sci.* 13, 446-450. **Review**
74. Sieghart W., Item Ch., Buchstaller A., Fuchs K., Höger H. and Adamiker D. (1993) Evidence for the existence of differential O-glycosylated  $\alpha_5$ -subunits of the  $\gamma$ -aminobutyric acid-A receptor in the rat brain. *J. Neurochem.* 60, 93-98.
75. Saletu B., Barbanoj M.J., Anderer P., Sieghart W. and Grünberger J. (1993) Clinical-pharmacological study with the two isomers (d-, l-) of fenfluramine and its comparison with chlorpromazine and d-amphetamine: blood levels, EEG-mapping and safety evaluation. *Meth. Find. Exp. Clin. Pharmacol.* 15, 291-312.
76. Mhatre M.C., Pena G., Sieghart W. and Ticku M.K. (1993) Antibodies specific for GABA-A receptor  $\alpha$ -subunits reveal that chronic alcohol treatment down-regulates  $\alpha$ -subunit expression in rat brain regions. *J. Neurochem.* 61, 1620-1625.
77. Aschauer H.N., Fischer G., Isenberg K.E., Meszaros K., Willinger U., Todd R.D., Beran H., Strobl R., Lang M., Fuchs K., Sieghart W., Reich T. and Cloninger C.R. (1993) No proof of linkage between schizophrenia-related disorders including schizophrenia and chromosome 2q21 region. *Eur. Arch. Psychiat. Clin. Neurosci.* 243, 193-198.
78. Item C., and Sieghart W. (1994) Binding of GABA-A receptors to tubulin. *J. Neurochem.*, 63, 1119-1125.
79. Kern W. and Sieghart W. (1994) Polyclonal antibodies directed against an epitope specific for the  $\alpha_4$ -subunit of GABA-A receptors identify a 67 kDa protein in rat brain membranes. *J. Neurochem.* 62, 764-769.
80. Tögel M., Mossier B., Fuchs K. and Sieghart W. (1994) GABA-A receptors displaying association of  $\gamma_3$ -subunits with  $\beta_{2/3}$ - and different  $\alpha$ -subunits exhibit unique pharmacological properties. *J. Biol. Chem.*, 269, 12993-12998.
81. Aschauer H.N., Lobos E.A., Isenberg K.E., Fischer G., Meszaros K., Willinger U., Fuchs K. Beran , H., Lang M., Chaudhry H.R., Sieghart W. and Todd R.D. (1994) A RFLP linkage group on chromosome 2 combining markers from two published maps. *Life Sci. Advances-Molecular Biology*, 13, 139-143.
82. Meszaros K., Willinger U., Heiden A.M., Fuchs K., Baumhackl U., Brücke T., Feucht M. Fathi , N., Lenzinger E., Miller E., Resinger E., Wöber-Bingöl C., Stompe T., Sieghart W., und Aschauer H.N. (1994) Chorea Huntington; Die (CAG)<sub>n</sub>-Sequenz am Gen IT15 in Österreich. *Wiener Klin. Wochenschrift* 106, 671-672.
83. Mossier B., Tögel M., Fuchs K. and Sieghart W. (1994) Immunoaffinity purification of  $\gamma$ -aminobutyric acid-A (GABA-A) receptors containing  $\gamma_1$ -subunits. Evidence for the presence of a single type of  $\gamma$ -subunit in GABA-A receptors. *J. Biol. Chem.* 269, 25777-25782.

84. Inglefield J.R., Sieghart W. and Kellogg C.K. (1994) Immunohistochemical and neurochemical evidence for GABA-A receptor heterogeneity between the hypothalamus and cortex. *J. Chem. Neuroanatomy* 7, 243-252.
85. Sieghart W. (1994) Pharmacology of benzodiazepine receptors: an update. *J. Psychiatr. Neurosci.* 19, 24-29. **Review**
86. Nusser Z., Roberts D.B.J., Baude A., Richards J.G., Sieghart W. and Somogyi P.(1995) Immunocytochemical localization of the  $\alpha_1$  and  $\beta_{2/3}$  subunits of the GABA-A receptor in relation to specific GABAergic synapses in the dentate gyrus. *Eur. J. Neurosci.* 7, 630-646.
87. Fenelon V.S., Sieghart W. and Herbison A.E. (1995) Cellular localization and differential distribution of GABA-A receptor subunit proteins and mRNA's within hypothalamic magnocellular neurons. *Neurosci.* 64, 1129-1143.
88. Fuchs K., Zezula J., Slany A. and Sieghart W. (1995) Endogenous [ $^3$ H]flunitrazepam binding in human embryonic kidney cell line 293. *Eur. J. Pharmacol., Mol. Pharmacol. Section* 289, 87-95.
89. Sieghart W. (1995) Structure and pharmacology of GABA-A receptor subtypes. *Pharmacol. Rev.* 47, 181-234. **Review**
90. Marksteiner J., Lassnig L., Humpel C., Sieghart W. and Saria A. (1995) Distribution of GABA-A receptor  $\alpha_1$ -subunit like immuno-reactivity in comparison with that of enkephalin and substance P in the rat forebrain. *Synapse* 20, 165-174.
91. Zezula J., Karall S., Dodd R.H., and Sieghart W. (1995) [ $^3$ H]Propyl-6-azido- $\beta$ -carboline-3-carboxylate: a new photoaffinity label for the GABA-A-benzodiazepine receptor. *Eur. J. Pharmacol.*, 281, 93-96.
92. Slany A., Zezula J., Tretter V. and Sieghart W. (1995) Rat  $\beta_3$ -subunits expressed in human embryonic kidney 293 cells form high affinity [ $^{35}$ S]t-butylbicyclicophosphorothionate binding sites modulated by several allosteric ligands of GABA-A receptors. *Mol. Pharmacol.*, 48, 385-391.
93. Slany A., Zezula J., Fuchs K. and Sieghart W. (1995) Allosteric modulation of [ $^3$ H]flunitrazepam binding to recombinant GABA-A receptors. *Eur. J. Pharmacol. Mol. Pharmacol. Section*, 291, 99-105.
94. Nusser Z., Sieghart W., Stephenson F.A. and Somogyi P. (1996) The  $\alpha_6$  subunit of the GABA-A receptor is concentrated in both inhibitory and excitatory synapses on cerebellar granule cells. *J. Neurosci.*, 16, 103-114.
95. Meszaros K., Lenzinger E., Füreder T., Hornik K., Willinger U., Stompe T., Heiden A.H., Resinger E., Fathi N., Gerhard E., Fuchs K., Miller-Reiter E., Pfersmann V., Sieghart W., Aschauer H.N., Kasper S. (1996) Schizophrenia and the dopamine- $\beta$ -hydroxylase gene: results of a linkage and association study. *Psychiatr. Genetics*, 6, 17-22.
96. Todd A.J., Watt C., Spike R.C. and Sieghart W. (1996) Co-localization of GABA, glycine and their receptors at synapses in the rat spinal cord. *J. Neurosci.*, 16, 974-982.
97. Meszaros K., Brücke T., Fuchs K., Gerhard E., Sieghart W., Harasco van der Meer C., Aschauer H.N. (1996) Normal CAG repeats in the Huntington gene in a family with benign familial chorea. *Psychiatric Genetics* 6, 91-94.
98. Meszaros K., Lenzinger E., Füreder T., Hornik K., Willinger U., Isenberg K.E., Todd R.D., Cloninger C.R., Reich T., Fuchs K., Sieghart W., Aschauer H.N. (1996) The influence of phenotype on the outcome of linkage analysis of schizophrenia. *Schizophrenia Res.* 22, 89-90.
99. Marksteiner J., Kaufmann W., Pfaller K., Sieghart W. and Saria A. (1996) Striatal efferents preferentially innervate neurons in the central pallidum containing GABA-A receptor alpha 1 subunit-like immunoreactivity. *Synapse*, 23, 107-114.

100. Zezula J., Slany A. and Sieghart W. (1996) Interaction of allosteric ligands with GABA-A receptors containing one, two, or three different subunits. *Eur. J. Pharmacol.*, 301, 207-214.
101. Scholze P., Ebert V. and Sieghart W. (1996) Affinity of various ligands for GABA-A receptors containing  $\alpha 4\beta 3\gamma 2$ ,  $\alpha 4\gamma 2$ , or  $\alpha 1\beta 3\gamma 2$  subunits. *Eur. J. Pharmacol.*, 304, 155-162.
102. Nusser Z., Sieghart W., Benke D., Fritschy J.M., and Somogyi P. (1996) Differential synaptic localization of two major  $\gamma$ -aminobutyric acid type A receptor  $\alpha$  subunits on hippocampal pyramidal cells. *Proc. Natl. Acad. Sci. USA* 93, 11939-11944.
103. Ebert V., Scholze P. and Sieghart W. (1996) Extensive heterogeneity of recombinant  $\gamma$ -aminobutyric acid-A receptors expressed in  $\alpha 4\beta 3\gamma 2$ -transfected human embryonic kidney 293 cells. *Neuropharmacol.*, 35, 1323-1330.
104. Somogyi P., Fritschy J.M., Benke D., Roberts J.D.B., and Sieghart W. (1996) The  $\gamma 2$  subunit of the GABA-A receptor is concentrated in synaptic junctions containing the  $\alpha 1$  and  $\beta 2/3$  subunits in hippocampus, cerebellum and globus pallidus. *Neuropharmacol.*, 35, 1425-1444.
105. Jones A., Korpi E.R., McKernan R.M., Nusser Z., Pelz R., Mäkelä R., Mellor J.R., Pollard S., Bahn S., Stephenson R.A., Randall A.D., Sieghart W., Somogyi P., Smith A.J.H., and Wisden W. (1997) Ligand-gated ion channel subunit partnerships: GABA-A receptor  $\alpha 6$  subunit gene inactivation inhibits  $\delta$  subunit expression. *J. Neurosci.*, 17, 1350-1362.
106. Tretter V., Ehya N., Fuchs K. and Sieghart W. (1997) Stoichiometry and assembly of a recombinant GABA-A receptor subtype. *J. Neurosci.*, 17, 2728-2737.
107. Maric D., Maric I., Ma W., Lahojuji F., Somogyi R., Wen X., Sieghart W., Fritschy J.M. and Barker J.L. (1997) Anatomical gradients in proliferation and differentiation of embryonic rat CNS accessed by buoyant density fractionation:  $\alpha 3$ ,  $\beta 3$  and  $\gamma 2$  GABA-A receptor subunit co-expression by postmitotic neocortical neurons correlates directly with cell buoyancy. *Eur. J. Neurosci.* 9, 507-522.
108. Devaud L.L., Fritschy J.M., Sieghart W. and Morrow A.L. (1997) Bi-directional alterations of GABA-A receptor subunit peptide levels in rat cortex during chronic ethanol consumption and withdrawal. *J. Neurochem.* 69, 126-130.
109. von Meyer L., Hänseler E., Lardet G., Scholer A. and Sieghart W. (1997) European multicenter evaluation of the analytical performance of the Abbott AxSYM abused drugs assays. *Eur. J. Clin. Chem. Clin. Biochem.* 35, 133-140.
110. Meszaros K., Lenzinger E., Hornik K., Schönbeck G., Hatzinger R., Langer G., Sieghart W., Aschauer H.N. (1997) Biperiden and haloperidol plasma levels and extrapyramidal side effects in schizophrenic patients. *Neuropsychobiol.* 36, 69-72.
111. Sperk G., Schwarzer C., Tsunashima K., Fuchs K. and Sieghart W. (1997) GABA-A receptor subunits in the rat hippocampus I: Immunocytochemical distribution of thirteen subunits. *Neurosci.*, 80, 987-1000.
112. Schwarzer C., Tsunashima K., Wanzenböck C., Fuchs K., Sieghart W., and Sperk G. (1997) GABA-A receptor subunits in the rat hippocampus II: Altered distribution in kainic acid-induced temporal lobe epilepsy. *Neurosci.*, 80, 1001-1017.
113. Tsunashima K., Schwarzer C., Kirchmair E., Sieghart W. and Sperk G. (1997) GABA-A receptor subunits in the rat hippocampus III: Altered mRNA expression in kainic acid-induced epilepsy. *Neurosci.*, 80, 1019-1032.
114. Köhler D., Härtter S., Fuchs K., Sieghart W. and Hiemke C. (1997) CYP2D6 genotype and phenotyping by determination of dextromethorphan and metabolites in serum of healthy controls and of patients under psychotropic medication. *Pharmacogenetics*, 7, 453-461.

115. Nusser Z., Sieghart W. and Somogyi P. (1998) Segregation of different GABA-A receptors to synaptic and extrasynaptic membranes of cerebellar granule cells. *J. Neurosci.* 18, 1693-1703.
116. Jechlinger M., Pelz R., Tretter V., Klausberger T. and Sieghart W. (1998) Subunit composition and quantitative importance of heterooligomeric receptors: GABA-A receptors containing  $\alpha$ 6 subunits. *J. Neurosci.* 18, 2449-2457.
117. Matthews D. B., Devaud L.L., Fritschy J.M., Sieghart W. and Morrow A.L. (1998) Differential regulation of GABA-A receptor gene expression by ethanol in the rat hippocampus versus cerebral cortex. *J. Neurochem.* 70, 1160-1166.
118. Spurlock, G., Williams, J., McGuffin, P., Aschauer, H.N., Lenzinger, E., Fuchs, K., Sieghart, W., Meszaros, K., Fathi, N., Laurent, C., Mallet, J., Macciardi, F., Pedrini, S., Gill, M., Hawi, Z., Gibson, S., Jazin, E.E., Yang, H.T., Adolfsson, R., Pato, C.N., Dourado, A.M., Owen, M.J. (1998) European Multicentre Association Study of Schizophrenia: A study of the DRD2Ser311Cys and DRD3Ser9Gly Polymorphisms. *Am. J. Medical Genetics* 81, 24-28.
119. Mitsuyama, H., Little, K.Y., Sieghart, W., Devaud, L.L., Morrow, A.L. (1998) GABA-A receptor alpha1, alpha4, and beta3 subunit mRNA and protein expression in the frontal cortex of human alcoholics. *Alcohol Clin. Exp. Res.* 22, 815-822.
120. Barnard, E.A., Skolnick, P., Olsen, R.W., Möhler, H., Sieghart, W., Biggio, G., Braestrup, C., Bateson, A.N., and Langer, S.Z. (1998) International Union of Pharmacology. XV. Subtypes of  $\gamma$ -aminobutyric acid-A receptors: classification on the basis of subunit structure and receptor function. *Pharmacol. Rev.* 50, 291-313. **Review**
121. Serafini R., Ma W., Maric D., Maric I., Lahjouji F., Sieghart W., Barker J.L. (1998) Initially expressed early embryonic GABA-A receptor Cl<sup>-</sup> ion channels exhibit heterogeneous channel properties. *Eur. J. Neurosci.* 10, 1771-1783.
122. Kapitany, T., Meszaros, K., Lenzinger, E., Schindler, S.D., Barnas, C., Fuchs, K., Sieghart, W., Aschauer, H.N., and Kasper, S. (1998) Genetic polymorphisms for drug metabolism (CYP2D6) and tardive dyskinesia in schizophrenia. *Schizophr. Res.* 32, 101-106.
123. Tobet, S.A., Henderson, R.G., Whiting, P.J., and Sieghart, W. (1999) Special relationship of  $\gamma$ -aminobutyric acid to the ventromedial nucleus of the hypothalamus during embryonic development. *J. Comp. Neurol.* 405, 88-98.
124. Kannenberg K., Sieghart W., and Reuter H. (1999) Clusters of GABA-A receptors on cultured hippocampal cells correlate only partially with functional synapses. *Eur. J. Neurosci.* 11, 1256-1264.
125. Nusser Z., Ahmad Z., Tretter V., Fuchs K., Wisden W., Sieghart W., Somogyi P. (1999) Alterations in the expression of GABA-A receptor subunits in cerebellar granule cells after the disruption of the  $\alpha$ 6 subunit gene. *Eur. J. Neurosci.* 11, 1685-1697.
126. Sieghart W., Fuchs K., Tretter V., Ebert V., Jechlinger M., Höger H., Adamiker D. (1999) Structure and subunit composition of GABA-A receptors. *Neurochem. Int.* 34, 379-385 **Review**
127. Ebert V., Scholze P., Fuchs K., and Sieghart W. (1999) Identification of subunits mediating clustering of GABA-A receptors by rapsyn. *Neurochem. Int.* 34, 453-463
128. Lenzinger, E., Neumeister, A., Praschak-Rieder, N., Fuchs, K., Gerhard, E., Willeit, M., Sieghart, W., Kasper, S.F., Hornik, K., and Aschauer, H.N. (1999) Behavioral effects of tryptophan depletion in seasonal affective disorder associated with the serotonin transporter gene? *Psychiatry Res.* 22, 241-246.
129. Maric D., Maric I., Wen X., Fritschy J.M., Sieghart W., Barker J.L., and Serafini R. (1999) GABA-A receptor subunit composition and functional properties of Cl<sup>-</sup> channels with differential sensitivity to zolpidem in embryonic rat hippocampal cells.

- J. Neurosci.* 19, 4921-4937.
130. Chen S., Huang X., Zeng X.J., Sieghart W., Tietz E.I. (1999) Benzodiazepine-mediated regulation of  $\alpha$ 1,  $\alpha$ 2,  $\beta$ 1-3, and  $\gamma$ 2 GABA-A receptor subunit proteins in the rat brain hippocampus and cortex. *Neurosci.*, 93, 33-44
  131. Bencsits E., Ebert V., Tretter V., and Sieghart W. (1999) A significant part of native  $\gamma$ -aminobutyric acid A receptors containing  $\alpha$ 4 subunits do not contain  $\gamma$  or  $\delta$  subunits. *J. Biol. Chem.* 274, 19613-19616.
  132. Thomet U., Baur R., Scholze P., Sieghart W., Sigel E. (1999) Dual mode of stimulation by the  $\beta$ -carboline ZK91085 of recombinant GABA-A receptor currents: molecular determinants affecting its action. *Br. J. Pharmacol.* 127, 1231-1239.
  133. Kannenberg K., Schaerer M.T., Fuchs K., Sieghart W. and Sigel E. (1999) A novel serine kinase with specificity for  $\beta$ 3 subunits is tightly associated with GABA-A receptors. *J. Biol. Chem.* 274, 21257-21264.
  134. Lévi S., Chesnoy-Marchais D., Sieghart W., and Triller A. (1999) Synaptic control of glycine-, GABA-A-receptors and gephyrin expression in cultured motoneurons. *J. Neurosci.* 19, 7434-7449.
  135. Thomet U., Furtmüller R., Sieghart W., Le Hyaric-Almeida M., Rousseau J.F., Dodd R.H., Venault P., Chapouthier G., Sigel E. (1999) EDPC: a novel high affinity ligand for the benzodiazepine site on rat GABA-A receptors. *Neurosci. Lett.* 269, 63-66
  136. Gustincich S., Feigenspan A., Sieghart W., and Raviola E. (1999) Composition of the GABA-A receptors of retinal dopaminergic neurons. *J. Neurosci.* 19, 7812-7822.
  137. Feucht M., Fuchs K., Pichlbauer E., Hornik K., Scharfetter J., Goessler R., Füreder T., Cvetkovic N., Sieghart W., Kasper S., Aschauer H. (1999) Possible association between childhood absence epilepsy and the gene encoding GABRB3. *Biol. Psychiatry* 46, 997-1002.
  138. Mihalek R. M., Banerjee P.K., Korpi E.R., Quinlan J.J., Firestone L.L., Mi - P.Z., Lagenaour C., Tretter V., Sieghart W., Anagnostaras S.G., Sage J. R., Fanselow M.S., Guidotti A., Spigelman I., Li Z., DeLorey T. M., Olsen R.W., and Homanics G. E. (1999) Attenuated sensitivity to neuroactive steroids in  $\gamma$ -aminobutyrate type A receptor delta subunit knockout mice. *Proc. Natl. Acad. Sci. USA*, 96, 12905-12910.
  139. Nusser Z., Sieghart W., and Mody I. (1999) Differential regulation of synaptic GABA-A receptors by cAMP-dependent protein kinase in mouse cerebellar and olfactory bulb neurons. *J. Physiol. (Lond)* 521, 421-435.
  140. Kapitany T., Schindl M., Schindler S.D., Heßelmann B., Füreder T., Barnas C., Sieghart W., and Kasper S. (1999) The citalopram challenge test in patients with major depression and in healthy controls. *Psychiatry Res.* 88, 75-88.
  141. Scharfetter J., Chaudhry H.R., Hornik K., Fuchs K., Sieghart W., Kasper S., Aschauer H.N. (1999) Dopamine D3 receptor gene polymorphism and response to clozapine in schizophrenic Pakistani patients. *Eur. Neuropsychopharmacol.* 10, 17-20.
  142. Okada M., Onodera K., Van Reterghem C., Sieghart W., and Takahashi T. (2000) Functional correlation of GABA-A receptor  $\alpha$  subunits expression with the properties of IPSCs in the developing thalamus. *J. Neurosci.* 20, 2202-2208.
  143. Louiset E., McKernan R., Sieghart W., Vaudry H. (2000) Subunit composition and pharmacological characterization of gamma-aminobutyric acid type A receptors in frog pituitary melanotrophs. *Endocrinol.* 141, 1083-1092.
  144. Jursky F., Fuchs K., Buhr A., Tretter V., Sigel E., Sieghart W. (2000) Identification of amino acid residues of GABA-A receptor subunits contributing to the formation and affinity of the tert-butylbicyclicphosphorothionate binding site. *J. Neurochem.* 74, 1310-1316.

145. Klausberger T., Fuchs K., Mayer B., Ehya N., Sieghart W. (2000) GABA-A receptor assembly: Identification and structure of  $\gamma 2$  sequences forming the intersubunit contacts with  $\alpha 1$  and  $\beta 3$  subunits. *J. Biol. Chem.* 275, 8921-8928.
146. Sassoe-Pognetto M., Panzanelli P., Sieghart W., and Fritschy J.M. (2000) Colocalization of multiple GABA-A receptor subtypes with gephyrin at postsynaptic sites. *J. Comp. Neurol.* 420, 481-498.
147. Nicoletti D., Ghini A.A., Furtmüller R., Sieghart W., Dodd R.H., Burton G. (2000) Synthesis and GABA-A receptor activity of 6-oxa-analogs of neurosteroids. *Steroids* 65, 349-356.
148. Uusi-Oukari M., Heikkila J., Sinkkonen S.T., Makelä R., Hauer B., Homanics G.E., Sieghart W., Wisden W., Korpi E.R. (2000) Long-range interactions in neuronal gene expression: evidence from gene targeting in the GABA-A receptor beta2-alpha6-alpha1-gamma 2 subunit gene cluster. *Mol. Cell Neurosci.* 16, 34-41.
149. Brandon N.J., Delmas P., Kittler J.T., McDonald B.J., Sieghart W., Brown D.A., Smart T.G., Moss S.J. (2000) GABA-A receptor phosphorylation and functional modulation in cortical neurons by a protein kinase C-dependent pathway. *J. Biol. Chem.* 275, 38856-38862.
150. Thomet U., Baur R., Razet R., Dodd R.H., Furtmüller R., Sieghart W., Sigel E. (2000) A novel positive allosteric modulator of the GABA-A receptor: the action of (+)-ROD188. *Br. J. Pharmacol.* 131, 843-850.
151. Simonian S.X., Skynner M.J., Sieghart W., Essrich C., Lüscher B., Herbison A.E. (2000) Role of the GABA-A receptor gamma 2 subunit in the development of gonadotropin-releasing hormone neurons in vivo. *Eur. J. Neurosci.* 12, 3488-3496.
152. Do-Rego J.L., Mensah-Nyagan G.A., Beaujean D., Vaudry D., Sieghart W., Luu-The V., Pelletier G., Vaudry H. (2000)  $\gamma$ -Aminobutyric acid, acting through  $\gamma$ -aminobutyric acid type A receptors, inhibits the biosynthesis of neurosteroids in the frog hypothalamus. *Proc. Natl. Acad. Sci.* 97, 13925-13930.
153. Sieghart W. (2000) Unraveling the function of GABA-A receptor subtypes. *Trends Pharmacol. Sci.* 21, 411-413. **Review**
154. Razet R., Thomet U., Furtmüller R., Jursky F., Sigel E., Sieghart W., Dodd R.H. (2000) Use of bicuculline, a GABA antagonist, as a template for the development of a new class of ligands showing positive allosteric modulation of the GABA-A receptor. *Bioorg. Med. Chem. Lett.* 10, 2579-2583.
155. Meszaros K., Lenzinger E., Hornik K., Füreder T., Stompe T., Willinger U., Heiden A., Fathi N., Gerhard E., Fuchs K., Sieghart W., Kasper S., Aschauer H.N. (2000) Association study of schizophrenia spectrum disorders and dopamine D3 receptor gene: is schizoaffective disorder special? *Psychiatry Res.* 96, 179-183.
156. Bailer U., Leisch F., Meszaros K., Lenzinger E., Willinger U., Strobl R., Gebhardt C., Gerhard E., Fuchs K., Sieghart W., Kasper S., Hornik K., Aschauer H.N. on behalf of the European Science Foundation Programme on Molecular Neurobiology of Mental Illness (2000) Genome Scan for Susceptibility Loci for Schizophrenia. *Neuropsychobiol.* 42, 175-182.
157. Razet R., Thomet U., Furtmüller R., Chiaroni A., Sigel E., Sieghart W. and Dodd R.H. (2000) 5-[1'-(2'-N-Arylsulfonyl-1',2',3',4'-tetrahydroisoquinolyl)]-4,5-dihydro-2(3H)-furanones: positive allosteric modulators of the GABA-A receptor with a new mode of action. *J. Med. Chem.* 43, 4363-4366.
158. Heiden A., Schüssler P., Itzlinger U., Leisch F., Scharfetter J., Gebhardt C., Fuchs K., Willeit M., Nilsson L., Miller-Reiter E., Meszaros K., Sieghart W., Hornik K., Kasper S., Aschauer H.N. (2000) Association studies of candidate genes in bipolar disorders. *Neuropsychobiol.* 42, Suppl. S1: 18-21.

159. Pirker S., Schwarzer C., Wieselthaler A., Sieghart W., Sperk G. (2000) GABA-A receptors: immunocytochemical distribution of 13 subunits in the adult rat brain. *Neuroscience* 101, 815-850.
160. Gebhardt Ch., Leisch F., Schüssler P., Fuchs K., Stompe T., Sieghart W., Hornik, K., Kasper S., and Aschauer H.N. (2000) Non-association of dopamine D4 and D2 receptor genes with personality in healthy individuals. *Psychiatric Genetics* 10, 131-137.
161. Buhr A., Wagner C., Fuchs K., Sieghart W., and Sigel E. (2001) Two novel residues in M2 of the GABA-A receptor affecting gating by GABA and picrotoxin affinity. *J. Biol. Chem.* 276, 7775-7781.
162. Saha S., Sieghart W., Fritschy J.M., McWilliam P.N., and Batten T.F. (2001)  $\gamma$ -Aminobutyric acid receptor (GABA-A) subunits in rat nucleus tractus solitarius (NTS) revealed by polymerase chain reaction (PCR) and immunohistochemistry. *Mol. Cell. Neurosci.* 17, 241-257.
163. Treter V., Hauer B., Nusser Z., Mihalek R.M., Höger H., Homanics G.E., Somogyi P., Sieghart W. (2001) Targeted disruption of the GABA-A receptor delta subunit gene leads to an upregulation of gamma2 subunit-containing receptors in cerebellar granule cells. *J. Biol. Chem.* 276, 10532-10538.
164. Klausberger T., Ehya N., Fuchs K., Fuchs T., Ebert V., Sarto I., and Sieghart W. (2001) Detection and binding properties of GABA-A receptor assembly intermediates. *J. Biol. Chem.* 276, 16024-16032.
165. Schwarzer C., Berresheim U., Pirker S., Wieselthaler A., Fuchs K., Sieghart W., and Sperk G. (2001) Distribution of the major gamma-aminobutyric acid(A) receptor subunits in the basal ganglia and associated limbic brain areas of the adult rat. *J. Comp. Neurol.* 433, 526-549.
166. Sigel E., Baur R., Furtmüller R., Razet R., Dodd R. H., and Sieghart W. (2001) Differential cross talk of ROD compounds with the benzodiazepine binding site. *Mol. Pharmacol.* 59, 1470-1477.
167. Maric D., Liu Q. Y., Maric I., Chaudry S., Chang Y.H., Smith S.V., Sieghart W., Fritschy J.M., Barker J.L. (2001) GABA expression dominates neuronal lineage progression in the embryonic rat neocortex and facilitates neurite outgrowth via GABA-A autoreceptor/Cl<sup>-</sup> channels. *J. Neurosci.* 21, 2343-2360.
168. Willeit M., Stastny J., Pirker W., Praschak-Rieder N., Neumeister A., Asenbaum S., Tauscher J., Fuchs K., Sieghart W., Hornik K., Aschauer H.N., Brücke T., Kasper S. (2001) No evidence for in vivo regulation of midbrain serotonin transporter availability by serotonin transporter promoter gene polymorphism. *Biol. Psychiat.* 50, 8-12.
169. Klausberger , Sarto I., Ehya N., Fuchs K., Furtmüller R., Mayer B., Huck S., and Sieghart W. (2001) Alternate use of distinct intersubunit contacts controls GABA-A receptor assembly and stoichiometry. *J. Neurosci.* 21, 9124-9133.
170. Dellovade T.L., Davis A.M., Ferguson C., Sieghart W., Homanics G.E., and Tobet S.A. (2001) GABA influences the development of the ventromedial nucleus of the hypothalamus. *J. Neurobiol.* 49, 264-276.
171. Furtmüller R., Schlag M.G., Berger M., Hopf R., Huck S., Sieghart W., and Redl H. (2002) Tranexamic acid, a widely used antifibrinolytic agent, causes convulsions by a  $\gamma$ -aminobutyric acid-A receptor antagonistic effect. *J. Pharmacol. Exptl. Ther.* 301, 168-173.
172. Korpi E.R., Mihalek R.M., Sinkkonen S.T., Hauer B., Hevers W., Homanics G.E., Sieghart W., and Lüddens H. (2002) Altered receptor subtypes in the forebrain of GABA-A receptor  $\delta$  subunit-deficient mice: recruitment of  $\gamma$ 2 subunits. *Neurosci.* 109, 733-743.

173. Peng Z., Hauer B., Mihalek R.M., Homanics G.E., Sieghart W., Olsen R.W., Houser C.R. (2002) GABA-A receptor changes in delta subunit-deficient mice: altered expression of alpha4 and gamma 2 subunits in the forebrain. *J. Comp. Neurol.* 446, 179-197.
174. El Hadri A., Abouabdellah A., Thomet U., Baur R., Furtmüller R., Sigel E., Sieghart W., and Dodd R.H. (2002) N-Substituted 4-amino-3,3-dipropyl-2(3H)-furanones: new positive allosteric modulators of the GABA-A receptor sharing electrophysiological properties with the anticonvulsant loreclezole. *J. Med. Chem.* 45, 2824-2831.
175. Sarto I., Klausberger T., Ehya N., Mayer B., Fuchs K., and Sieghart W. (2002) A novel site on  $\gamma$ 3 subunits important for assembly of GABA-A receptors. *J. Biol. Chem.* 277, 30656-30664.
176. Bailer U., Leisch F., Meszaros K., Lenzinger E., Willinger U., Strobl R., Heiden A., Gebhardt C., Dögel E., Fuchs K., Sieghart W., Kasper S., Hornik K., and Aschauer H.N. (2002) Genome scan for susceptibility loci for schizophrenia and bipolar disorder. *Biol. Psychiatry* 52, 40-52.
177. Kumar S., Sieghart W., Morrow A.L. (2002) Association of protein kinase C with GABA-A receptors containing  $\alpha$ 1 and  $\alpha$ 4 subunits in the cerebral cortex: selective effects of chronic ethanol consumption. *J. Neurochem.* 82, 110-117.
178. Sieghart W. and Sperk G. (2002) Subunit composition, distribution and function of GABA-A receptor subtypes. *Current Topics in Medicinal Chemistry* 2, 795-816.
- Review**
179. Sarto I., Wabnegger L., Dögl E., Sieghart W. (2002) Homologous sites of GABA-A receptor  $\alpha$ 1,  $\beta$ 3, and  $\gamma$ 2 subunits are important for assembly. *Neuropharmacol.* 43, 482-491.
180. Wisden W., Cope D., Klausberger T., Hauer B., Sinkkonen S., Tretter V., Lujan R., Jones A., Mody I., Sieghart W., Somogyi P. (2002) Ectopic expression of the GABA-A receptor alpha6 subunit in hippocampal pyramidal neurons produces extrasynaptic receptors and an increased tonic inhibition. *Neuropharmacol.* 43, 530-549.