

Kristallographische Studie zum
Sexualhormon-bindenden Globulin (SHBG)

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List of abbreviations

SHBG: Sex Hormone Binding Globulin

ABP: Androgen Binding Protein

CBG: Corticosteroid-Binding Globulin

DHT: 5 α -Dihydrotestosterone (5 α -Androstane-17 β -ol-3-one)

Estradiol: 17 β -estradiol (1, 3, 5(10)-estratrien-3, 17 β -diol)

17 β -DHA: 5 α -Androstane, 3 β , 17 β -diol

17 α -DHA: 5 α -Androstane, 3 β , 17 α -diol

Norgestrel: D(-) Levonorgestrel (4-estren-17 α - ethynyl-18-homo-17 β - ol-3-one)

Methoxyestradiol: 2-Methoxyestradiol (1, 3, 5 (10)-estratrien-2,3, 17 β -triol 2-methylether)

GAS6: Growth arrest specific protein 6

LG-domain: Laminin G-like domain

LBD: ligand-binding domain

AMP: adenosine monophosphate

cAMP: cyclic adenosine monophosphate

EDTA: ethylenediamine tetraacetic acid

DNA: deoxyribonucleic acid

cDNA: complementary DNA

IPTG: isopropyl-1-thio- β -D galactopyranoside

PBS: phosphate-buffered saline

PIPES: piperazine-1,2-bis[2-ethanesulfonic acid]

HEPES: N-[2-hydroxyethyl]piperazine-N⁻-[4-butanesulfonic acid]

DMSO: dimethylsulfoxide

PAGE: polyacrylamide gel electrophoresis

SDS: sodium dodecyl sulfate

APS: ammonium persulfate

TEMED: N, N, N', N'-tetramethylethylenediamine

PEG: polyethylene glycol

MIR: Multiple Isomorphous Replacement method

EMBL: European Molecular Biology Laboratory

ESRF: European Synchrotron Radiation Facility

DESY: Deutsches Elektronensynchrotron

rms: root mean square

PDB: Protein Data Bank

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List of Publications

- 1) Grishkovskaya, I., Avvakumov, G. V., Hammond, G. L., Catalano, M. and Muller, Y. A. Androgens and Estrogens Occupy the Steroid-binding Site of Human Sex Hormone Binding Globulin in Opposite Orientations. *J. Biol. Chem. J.* (article in preparation)
- 2) Grishkovskaya, I., Avvakumov, G.V., Hammond, G. L. and Muller, Y. A. (2001) Resolution of a disordered region at the entrance of the human sex hormone-binding globulin steroid-binding site. *J. of Mol. Biol.* (submitted)
- 3) Hilpert, J., Vorum, H., Burmeister, R., Spoelgen, R., Misselwitz, R., Grishkovskaya, I., Avvakumov, G. V., Hammond, G. L., Nykjaer, A., Willnow, T.E. (2001) Efficient eukaryotic expression system for authentic human sex hormone binding globulin. *Biochemical Journal*, **360**, 609-615
- 4) Avvakumov, G. V., Grishkovskaya, I., Muller, Y. A., Hammond, G. L. (2001) Resolution of the human sex hormone-binding globulin dimer interface and evidence for two steroid-binding sites per homodimer. *J. Biol. Chem. J.*, **276**, 34453-34457
- 5) Grishkovskaya, I., Avvakumov, G. V., Sklenar, G., Dales, D., Hammond, G. L. & Muller, Y. A. (2000). Crystal structure of human sex hormone-binding globulin: steroid transport by a laminin G-like domain. *EMBO J.*, **19**, 504-512.
- 6) Grishkovskaya, I., Sklenar, G., Avvakumov, G. V., Dales, D., Behlke, J., Hammond, G. L. & Muller, Y. A. (1999). Crystallisation of the N-terminal domain of human sex hormone-binding globulin, the major sex steroid carrier in blood. *Acta cryst. D*, **55**, 2053-2055.