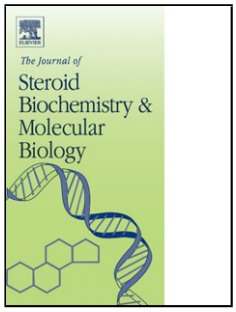

Title: Fundamental studies of adrenal retinoid-X-receptor: Protein isoform, tissue expression, subcellular distribution, and ligand availability

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FUNDAMENTAL STUDIES OF ADRENAL RETINOID-X-RECEPTOR: PROTEIN ISOFORM, TISSUE EXPRESSION, SUBCELLULAR DISTRIBUTION, AND LIGAND AVAILABILITY

Behling Cheng [1*], Fatema H. Al-Shammari [1], Isra'a A. Ghader [1], Fatima Sequeira [1], Jitendra Thakkar [1], Thazhumpal C. Mathew [2]

Department of Biochemistry [1], Faculty of Medicine, and
Department of Medical Laboratory Science [2], Faculty of Allied Health;
Kuwait University Health Science Center,
P. O. Box 24923, Safat 13110, Kuwait

(*Correspondence author: behling@hsc.edu.kw)

Highlights:

- Analysis of rat adrenal proteins revealed RXRα and RXRβ, but not RXRγ.
- RXRα resides in nucleus; RXRβ was localized in nucleus and post-nuclear particles.
- Adrenal ZF and medulla express more RXRα, whereas ZG expresses more RXRβ.
- LC/MS analysis did not detect the potent RXR-agonist 9-cis-retinoic acid.
- RXR-agonizing polyunsaturated fatty acids exist in each subcellular fraction.

ABSTRACT

Adrenal gland reportedly expresses many nuclear receptors that are known to heterodimerize with retinoid-X-receptor (RXR) for functions, but the information regarding the glandular RXR is not adequate. Studies of rat adrenal homogenate by Western blotting revealed three RXR proteins: RXRα (55 kDa), RXRβ (47 kDa) and RXR (56 kDa). RXRγ was not detectable. After fractionation, RXRα was almost exclusively localized in the nuclear fraction. In comparison, substantial portions of RXRβ and RXR were found in both nuclear and post-nuclear particle fractions, suggesting genomic and non-genomic functions. Cells immunostained for RXRα were primarily localized in zona fasciculata (ZF) and medulla, although some stained cells were found in zona glomerulosa (ZG) and zona reticularis (ZR).