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Characterization and partial purification of the 8-9S androgen receptor from benign prostatic hyperplasia tissues

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The present study reports a 3,800-fold purification of the 8-9S androgen-receptor complex from benign prostate hyperplasia (BPH) tissues using differential chromatography. In addition, the BPH androgen receptor complexes have been characterized using sucrose density gradient (SDG) ultracentrifugation, gel permeation, and anion exchange high performance liquid chromatography (HPLC). Results indicate that a) under nontransforming conditions, BPH cytosols contained both 8-9S (40-78%) and 4S (22-60%) androgen-receptor forms, b) apparent molecular weights of these androgen-receptor apparent molecular weights of these androgen-receptor complexes, as analyzed by gel permeation HPLC, were estimated to correspond at 270 kDa, and 90 kDa respectively, c) 8-9S androgen-receptor complexes were retained on an anion exchange HPLC column and could be eluted at 0.22 M KCl at a linear gradient, whereas 4S complexes were not retained on anion exchange columns under identical experimental conditions, d) 10X dilution of BPH cytosols containing only the 4S (0.6 M KCl) form and subsequent chromatography on anion exchange HPLC system was indicative of fragmentation (these fragments were retained on anion exchange columns and could be eluted by 0.33 M KCl on a linear gradient HPLC), and e) increased temperature (22 C) was permissive of proteolytic fragmentation (fragments were estimated to correspond at 30, 15, and 5 kDa). The results are discussed in relationship with the composition of the nontransformed androgen-receptor molecules.