CLAIMS

What is claimed is:

1. Use of a therapeutically effective amount of an herbal extract of *Rubia cordifolia* or a fraction thereof, in the manufacture of a medicament for the treatment of at least one disease or disorder related to the activity of at least one steroid hormone receptor selected from the group consisting of progesterone receptors, estrogen receptors, androgen receptors, and glucocorticoid receptors or the expression of at least one protein selected from the group consisting of Brd4, Brd2, cyclin D1, p53, Gata3, Poly[ADP-ribose] polymerase-1 (PARP-1) and CD47,

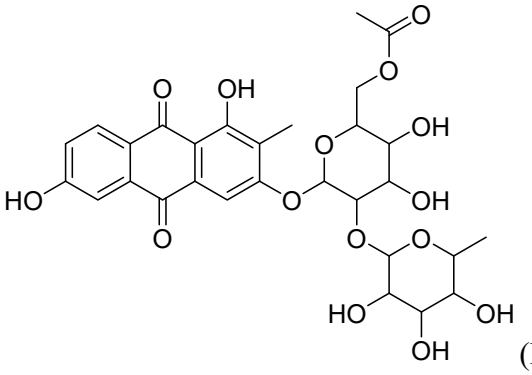
wherein the medicament is to be administered to a subject in need thereof,

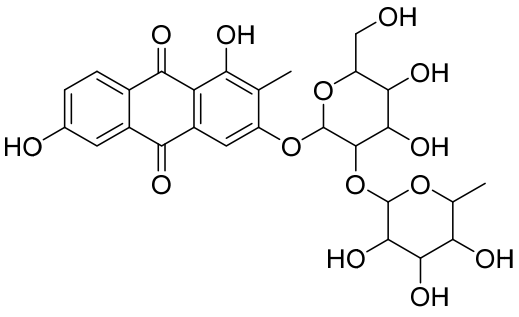
wherein the at least one disease or disorder related to the activity of at least one steroid hormone receptor is selected from the group consisting of a cancer, prostate hyperplasia, Cushing's syndrome, androgenetic alopecia, acne, seborrhea, hirsutism (excessive body hair), hidradenitis suppurativa, sexual dysfunction, precocious puberty (in both males and females), polycystic ovary syndrome, mastodynia (breast pain/tenderness), breast fibroids, mammoplasia (breast enlargement), macromastia (breast hypertrophy), gynecomastia, melasma, menorrhagia, endometriosis, endometrial hyperplasia, adenomyosis, uterine fibroids, and posttraumatic stress disorder (PTSD), and

wherein the at least one disease or disorder related to expression of the at least one protein is selected from the group consisting of Huntington's disease, schizophrenia, psoriasis, mantle cell lymphoma, breast carcinoma, bladder cancer, pituitary adenomas, parathyroid adenoma, pancreatic carcinoma, head and neck squamous cell carcinomas, and non-small cell lung cancers,

wherein the herbal extract or a fraction thereof is prepared by heating a solution of dry *Rubia cordofolia* powder and water at 80°C for 30 minutes.

2. The use of claim 1, wherein the active chemical species present in the herbal extract or the fraction thereof is selected from the group consisting of 1,3,6-Trihydroxy-2-methyl-9,10-anthracenedione 3-O-[α-L-Rhamnopyranosyl-(1→2)-6-O-acetyl-β-D-glucopyranoside] (RGA), 3,6-Trihydroxy-2-methyl-9,10-anthracenedione 3-O-[α-L-Rhamnopyranosyl-(1→2)-β-D-glucopyranoside] (RG) and salts, solvates, isomers or tautomers thereof



(RGA)


(RG).

3. The use of claim 1, wherein the cancer is selected from the group consisting of prostate cancer, breast cancer, ovarian cancer, lung cancer, uterine cancer, pancreatic cancer, colon cancer, hepatocellular carcinoma, glioblastoma, multiple myeloma, NUT carcinoma, leukemia, and lymphoma.

4. The use of claim 3, wherein the cancer is a treatment resistant cancer selected from the group consisting of castration resistant prostate cancer, enzalutamide resistant prostate cancer, glucocorticoid receptor mediated resistant prostate cancer, BRCA1 (double strand break repair) deficiency cancer, double negative breast cancer, and triple negative breast cancer.

5. The use of claim 1, wherein the medicament downregulates the expression of at least one protein selected from the group consisting of Brd4, Brd2, cyclin D1, p53, Gata3, Poly[ADP-ribose] polymerase-1 (PARP-1), and CD47.

6. The use of claim 1, wherein the medicament inhibits hyperacetylation of histone H3 in the subject.

7. The use of claim 1, wherein the medicament promotes the phagocytosis of cancerous tumor cells in the subject.

8. The use of claim 1, wherein the medicament inhibits indoleamine-pyrrole 2,3-dioxygenase (IDO) activity in the subject.

9. The use of claim 1, wherein the medicament is to be administered in combination with at least one immune checkpoint inhibitor.

10. The use of claim 9, wherein the at least one immune checkpoint inhibitor is selected from the group consisting of an anti-PD1, an anti-PD-L1, and an anti-CTLA4.

11. The use of claim 9, wherein the at least one immune checkpoint inhibitor is selected from the group consisting of Ipilimumab, Avelumab, Pembrolizumab, Nivolumab, Durvalumab, and Atezolizumab.

12. The use of claim 1, wherein the subject is a mammal.

13. The use of claim 12, wherein the subject is human.