Reviewer's report

Title: Network analysis of an in vitro model of androgen-resistance in prostate cancer

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Reviewer: SANKAR N. MAITY

Reviewer's report:

The authors developed an androgen-independent LNCaP subline (LNCaP-AI), and analyzed probable androgen-resistance pathway by gene expression comparison with the parental LNCaP cells and with published expression datasets of human prostate tumor treated with androgen-deprivation therapy. Importantly, the analysis of this paper identified several steroid hormone receptors that can be expressed higher level in androgen resistance cell line and in human tumors. In particular, the data showed progesterone receptor (PGR) is overexpressed in androgen insensitive cells and human tumors.

Major Compulsory Revisions

The authors did not analyze expression of ligand-independent androgen receptor (AR) variants (AR-V7 and others), an important androgen resistance mechanism as described in many recent publications. It is possible PGR can be expressed when no AR variants are present, thus it may represent mechanism of resistance in subset of prostate cancer patients. This needs to be addressed.

It is not clear whether AR plays any role in LNCaP-AI cells. For example, whether knockdown of AR in LNCaP-AI cells can have any impact?

Considering importance of PGR, the authors should measure PGR protein expression in LNCaP and LNCaP-AI cells.

Minor Essential Revisions

It is not easy to follow the steroid receptor nomenclature presented in the table and text. I suggest adding both gene and widely used name [e.g. NR3C1 (GR)] in the table.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
I declare that I have no competing interests