Reviewer's report

Title: Cross-linking of CD24 inhibits growth of MCF-7 breast cancer cells

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Reviewer: Periasamy Selvaraj

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General
The manuscript by Kim et. al. describes about the effect of cross-linking CD24 on human breast cancer cell lines MCF-7 and MDA-MB-231. The authors show that addition of anti-CD24 antibody to CD24 expressing MCF-7 cells inhibited cell proliferation. The results further show a moderate decrease in cell survival as determined by MTT assay and also by apoptosis assay. The authors conclude that 'blockage of CD24 can be proposed as a novel therapeutic strategy for breast cancer treatment'. There are many serious problems with this manuscript.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

1. In figure 1A, the results show that control rabbit IgG (this is referred as ‘anti-rabbit IgG’ in many places) at 1 and 2 microgram/ml concentration dramatically inhibited proliferation of MCF-7 cells. It is not clear why a control rabbit IgG as low as 2 microgram/ml can inhibit 96% of MCF-7 cell growth? Is the rabbit IgG stock had preservatives such as sodium azide? No explanation was provided. Why use distilled water instead of medium or saline as a control? Addition of water to culture medium will change the osmolarity of the medium and may kill the cells. Therefore the results presented in the manuscript may not be not reliable.

2. Reference 15 is wrongly interpreted and quoted. The results described in manuscript 15 show that addition of anti-CD24 mAb blocks the T cell costimulation dependent T cell proliferation and do not show anything about induction of apoptosis in T cells due to CD24 cross-linking. But authors quote ‘cross-linking of CD24 induced apoptosis in several cells, including human T cells [15]’

3. The authors use terms such as ‘antibody binding’, ‘cross-linking’, and ‘antibody blockage’ to refer the same thing. These words do not refer to same thing; they mean different events. Example: ‘functional blocking of CD24 through cross-linking in MCF-7’

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)
The manuscript is poorly written. The authors did not even bother to proof read the manuscript. Apart from many grammatical mistakes, many typos were not corrected. Some examples: microgram is referred as ‘ug’ and micrometer is referred as ‘um’; CD24 is referred throughout the reference as ‘cd24’; and there are square symbols to refer centigrade!

Discretionary Revisions (which the author can choose to ignore)

**What next?:** Reject because scientifically unsound

**Level of interest:** An article of limited interest

**Quality of written English:** Not suitable for publication unless extensively edited

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests