

## Calcium-sensing Receptor Polymorphisms at rs1801725 and High Circulating Calcium in Breast Cancer: Possible Molecular Explanation

Sir,

The circulating calcium is widely discussed on its relationship with clinical features of breast cancer.<sup>[1,2]</sup> In a recent report, Wang *et al.* found that “decreased sensitivity of the calcium-sensing receptor (CASR) to calcium due to inactivating polymorphisms at rs1801725, may predispose up to 20% of breast cancer cases to high circulating calcium-associated larger and/or aggressive breast tumors.<sup>[3]</sup>” In fact, the relationship between some haplotypes of CASR is mentioned for the relationship with high blood calcium. Here, the authors tried to use the basic molecular quantum calculation for predicting the molecular mass change due to rs1801725. The similar approach as the previously published article was used.<sup>[4]</sup> First, the prediction of transcription of rs1801725 was done, and the resulted corresponding A986S mutated type was further assessed for change in molecular mass. The mutated site (986) has 118% mass comparing to naïve wild type. Comparing to naïve A986, the S986 has a lower molecular mass. This can implies that more molecular reaction and result biological produce and process should be more in mutated type due to rs1801725. Hence, the higher circulating blood calcium can be expected in rs1801725.

### Financial support and sponsorship

Nil.

### Conflicts of interest

There are no conflicts of interest.

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### References

1. Shao T, Klein P, Grossbard ML. Vitamin D and breast cancer. *Oncologist* 2012;17:36-45.
2. Sprague BL, Skinner HG, Trentham-Dietz A, Lee KE, Klein BE, Klein R, *et al.* Serum calcium and breast cancer risk in a prospective cohort study. *Ann Epidemiol* 2010;20:82-5.
3. Wang L, Widatalla SE, Whalen DS, Ochieng J, Sakwe AM. Association of calcium sensing receptor polymorphisms at rs1801725 with circulating calcium in breast cancer patients. *BMC Cancer* 2017;17:511.
4. Joob B, Wiwanitkit V. HSD11B1 rs846908 polymorphisms and tacrolimus concentrations: Quantum chemical analysis and implication in patients with renal transplantation. *J Nephroarmacol* 2017;6:19-20.

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10.4103/ijmpo.ijmpo\_195\_17

**How to cite this article:** Sookaromdee P, Wiwanitkit V. Calcium-sensing receptor polymorphisms at rs1801725 and high circulating calcium in breast cancer: Possible molecular explanation. *Indian J Med Paediatr Oncol* 2019;40:S191.

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