

1 **Genetic factors influencing milk and fat yields in tropically adapted dairy cattle:**  
2 **insights from quantitative trait loci analysis and gene associations**

3  
4 Thawee Laodim<sup>1,2</sup>, Skorn Koonawootrittriron<sup>2,3,\*</sup>, Mauricio A. Elzo<sup>2,4</sup>,  
5 Thanathip Suwanasopee<sup>2,3</sup>, Danai Jattawa<sup>2,3</sup>, and Mattaneeya Sarakul<sup>2,5</sup>

6  
7 **\* Corresponding author: Skorn Koonawootrittriron**

8 Tel: +66-2-579-1120 Ext. 17, Fax: +66-2-579-1120, E-mail: agrskk@ku.ac.th

9 <sup>1</sup> Department of Animal Science, Faculty of Agriculture at Kamphaeng Saen, Kasetsart

10 University Kamphaeng Saen Campus, Nakhon Pathom, 73140, Thailand

11 <sup>2</sup> Tropical Animal Genetic Special Research Unit (TAGU), Kasetsart University, Bangkok,

12 10900, Thailand

13 <sup>3</sup> Department of Animal Science, Faculty of Agriculture, Kasetsart University, Bangkok,

14 10900, Thailand

15 <sup>4</sup> Department of Animal Sciences, University of Florida, Gainesville, 32611-0910, FL, USA

16 <sup>5</sup> Department of Animal Science, Faculty of Agriculture and Technology, Nakhon Phanom

17 University, Nakhon Phanom, 48000, Thailand

18  
19 **ORCID**

20 Thawee Laodim <https://orcid.org/0000-0003-1993-0454>

21 Skorn Koonawootrittriron <https://orcid.org/0000-0001-6170-7876>

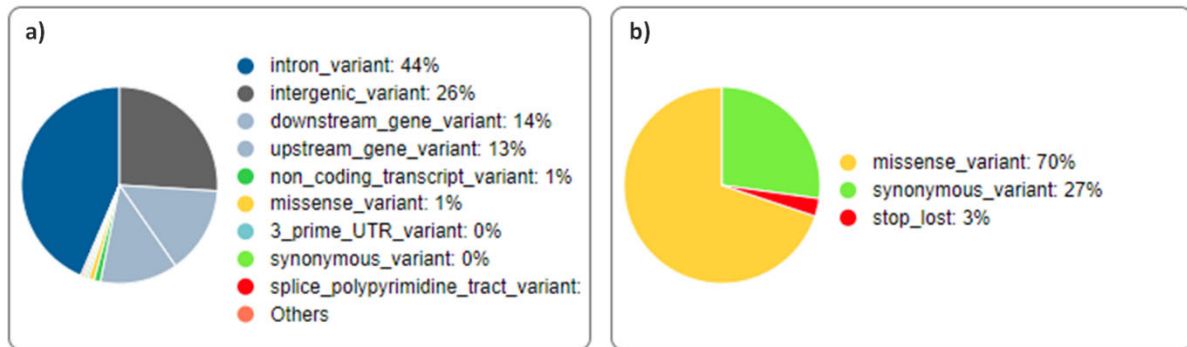
22 Mauricio A. Elzo <https://orcid.org/0000-0002-9319-3846>

23 Thanathip Suwanasopee <https://orcid.org/0000-0002-9707-6428>

24 Danai Jattawa <https://orcid.org/0000-0003-1398-0282>

25 Mattaneeya Sarakul <https://orcid.org/0000-0003-4041-7938>

26



738

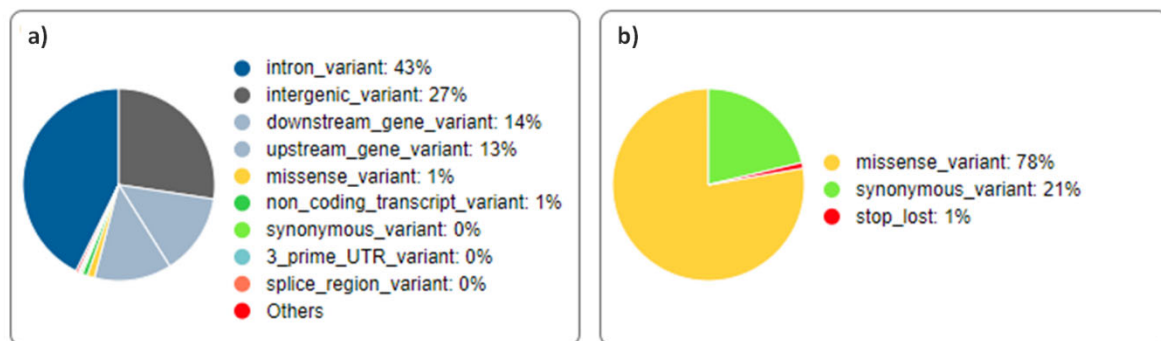
739 **Supplemental Figure S1.** Variant effect predictors (VEP) annotations for the variants

740 associated with milk yield. a) Overall distribution of VEP annotations for all variants

741 within 15 kb upstream to 15kb downstream of the reference bovine genome assembly.

742 b) Annotation distribution for the variants present in coding sequences of all variants.

743



744

745 **Supplemental Figure S2.** Variant effect predictors (VEP) annotations for the variants

746 associated with milk yield. a) Overall distribution of VEP annotations for all variants

747 within 15 kb upstream to 15kb downstream of the reference bovine genome assembly.

748 b) Annotation distribution for the variants present in coding sequences of all variants.

749