

Applying genotypic principal component scores as latent phenotypes in genome- wide and epistatic analyses of soybean agronomic traits.

Simon Lackey^{1,2†}, Siwar Haidar^{1,2†}, Martin Charette¹, Louise O'Donoughue³, Istvan Rajcan⁴, Francois Belzile⁵, Ashkan Golshani², Elroy Cober^{1*}, Bahram Samanfar^{1,2*} Author affiliations:

¹Agriculture and Agri-Food Canada, Ottawa Research and Development Centre, Ottawa, ON, Canada ²Department of Biology, Ottawa Institute of Systems Biology, Carleton University, Ottawa, ON, Canada

³CÉROM, Centre de recherche Sur Les Grains Inc., Saint-Mathieu de Beloeil, QC, Canada

⁴Department of Plant Agriculture, University of Guelph, Guelph, ON, Canada

⁵Department of Phytology, Institut de Biologie Intégrative et des Systèmes (IBIS), Université de Laval, Québec City, QC, Canada

*Contact information for corresponding authors: Bahram Samanfar, bahram.samanfar@agr.gc.ca Elroy Cober, elroy.cober@agr.gc.ca

† co-first authors

Simon Lackey^{1,2†}, Siwar Haidar^{1,2†}, Martin Charette¹, Louise O'Donoughue³, Istvan Rajcan⁴, Francois Belzile⁵, Ashkan Golshani², Elroy Cober^{1*}, Bahram Samanfar^{1,2*}

Author affiliations:

¹Agriculture and Agri-Food Canada, Ottawa Research and Development Centre, Ottawa, ON, Canada

²Department of Biology, Ottawa Institute of Systems Biology, Carleton University, Ottawa, ON, Canada

³CÉROM, Centre de recherche Sur Les Grains Inc., Saint-Mathieu de Beloeil, QC, Canada

⁴Department of Plant Agriculture, University of Guelph, Guelph, ON, Canada

⁵Department of Phytology, Institut de Biologie Intégrative et des Systèmes (IBIS), Université de Laval, Québec City, QC, Canada

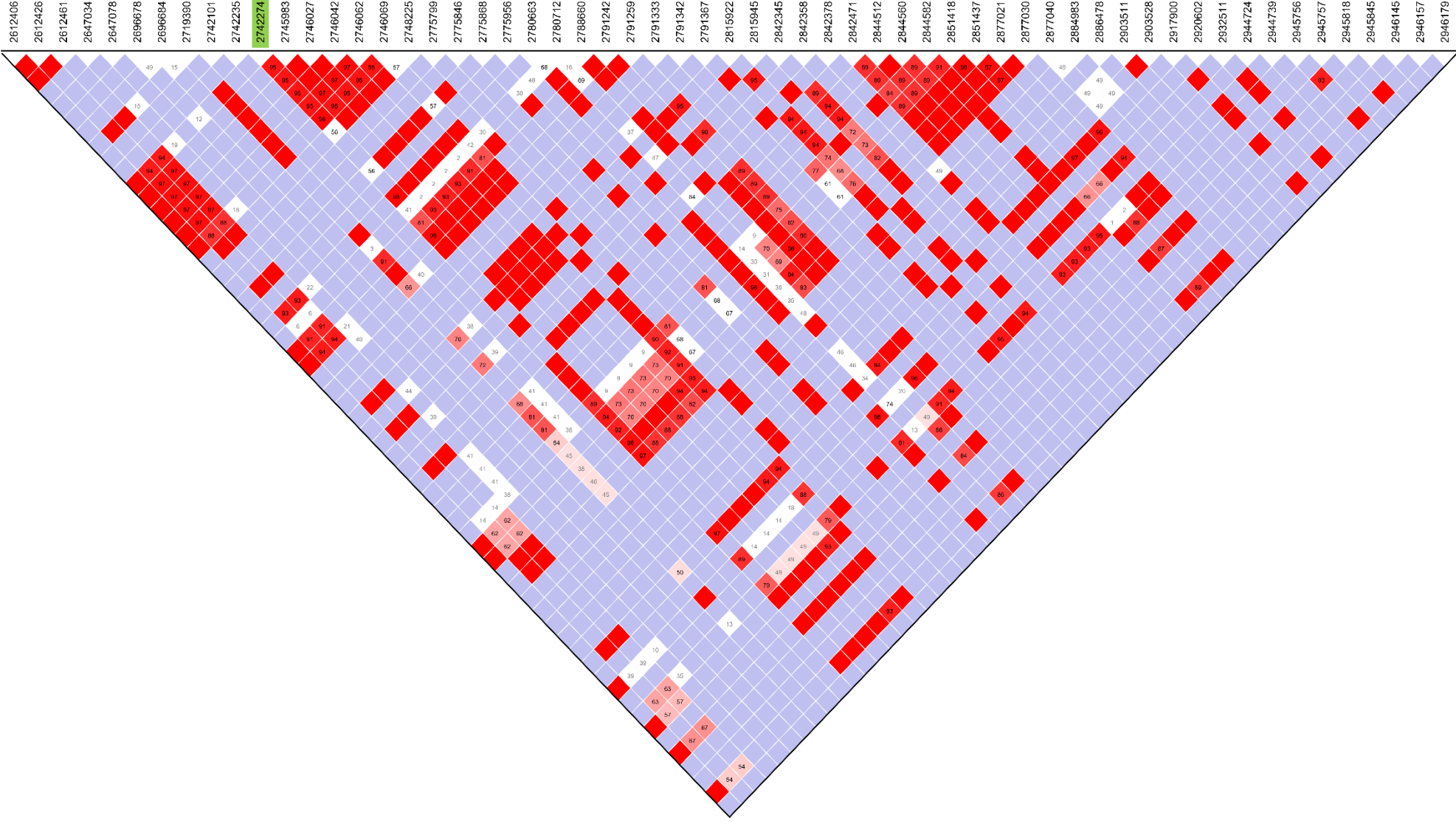
*Contact information for corresponding authors:

Bahram Samanfar, bahram.samanfar@agr.gc.ca

Elroy Cober, elroy.cober@agr.gc.ca

† co-first authors

Mat-3-PC2-1

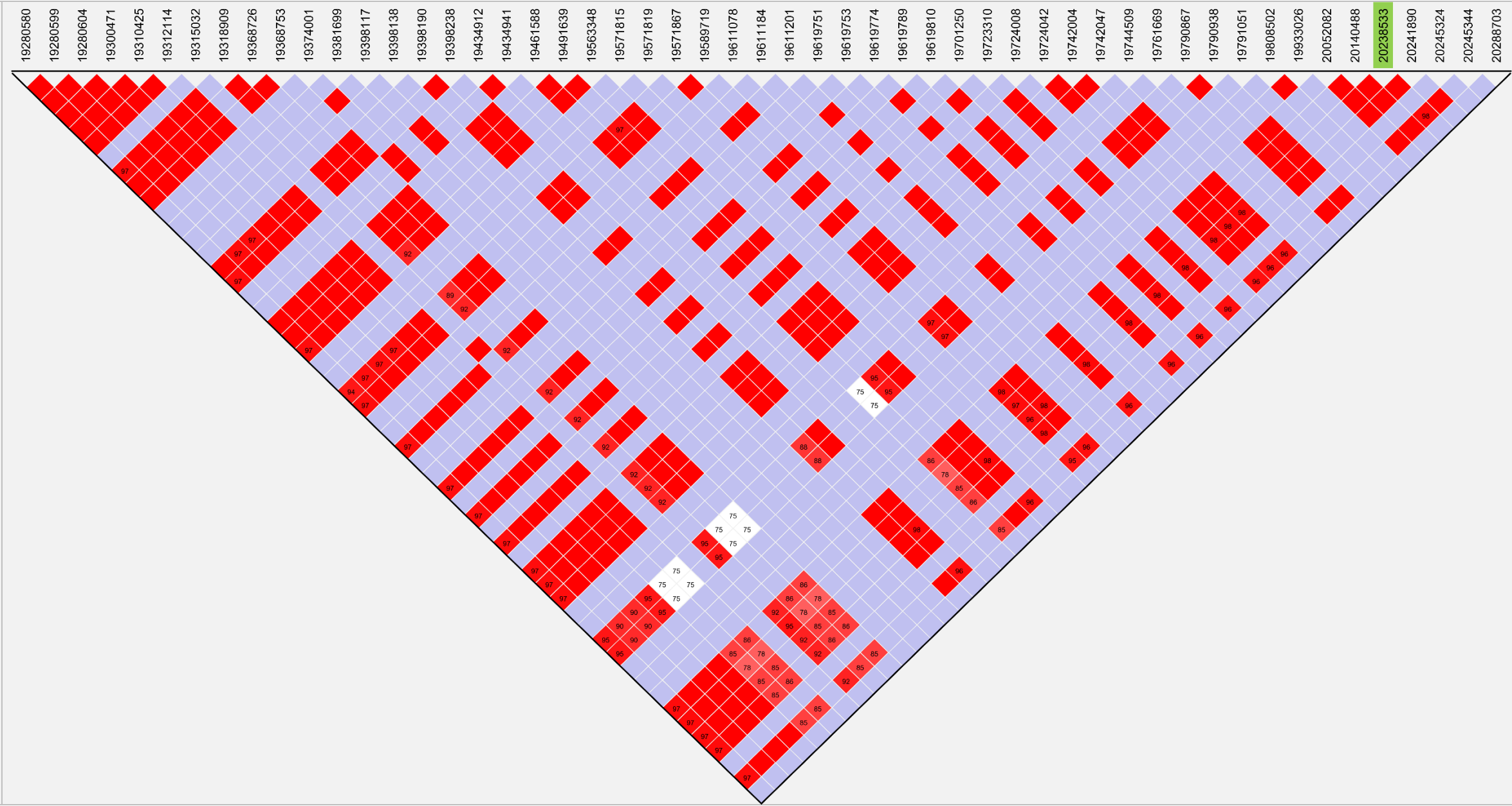


Oil-4-PC1-2	Oil-4-PC1-1
33 46241905 46247981 46248253	3445466 3458217 3458233 3458279 3466680 3466698 3488005 3498196 3502703 3502779 3505288 3509078 3509391 3515529 3515730 97 94 94 89 89 92 91 83 59 92 83 59 91 91 82 83 79 79 63 50 50 87 59 84

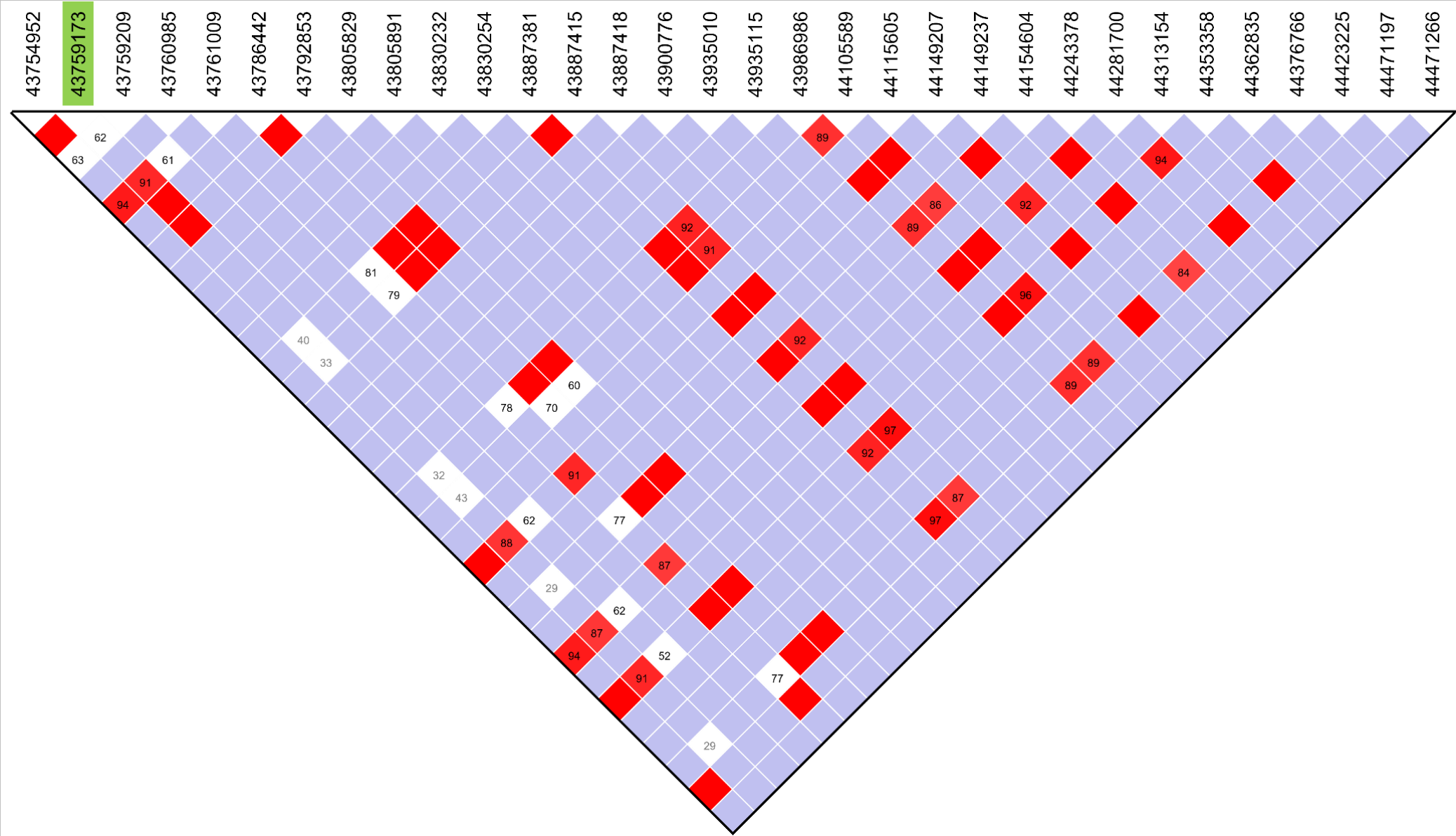
Mat-5-PC1-1/Yld-5-PC1-1

Oil-5-PC1-3	
31424750	
31424775	
31429564	
31429662	
31429682	
31431525	
31474290	92
31482466	37
31491486	38
31491535	46
31491548	47
31491573	65
31491576	64
	54

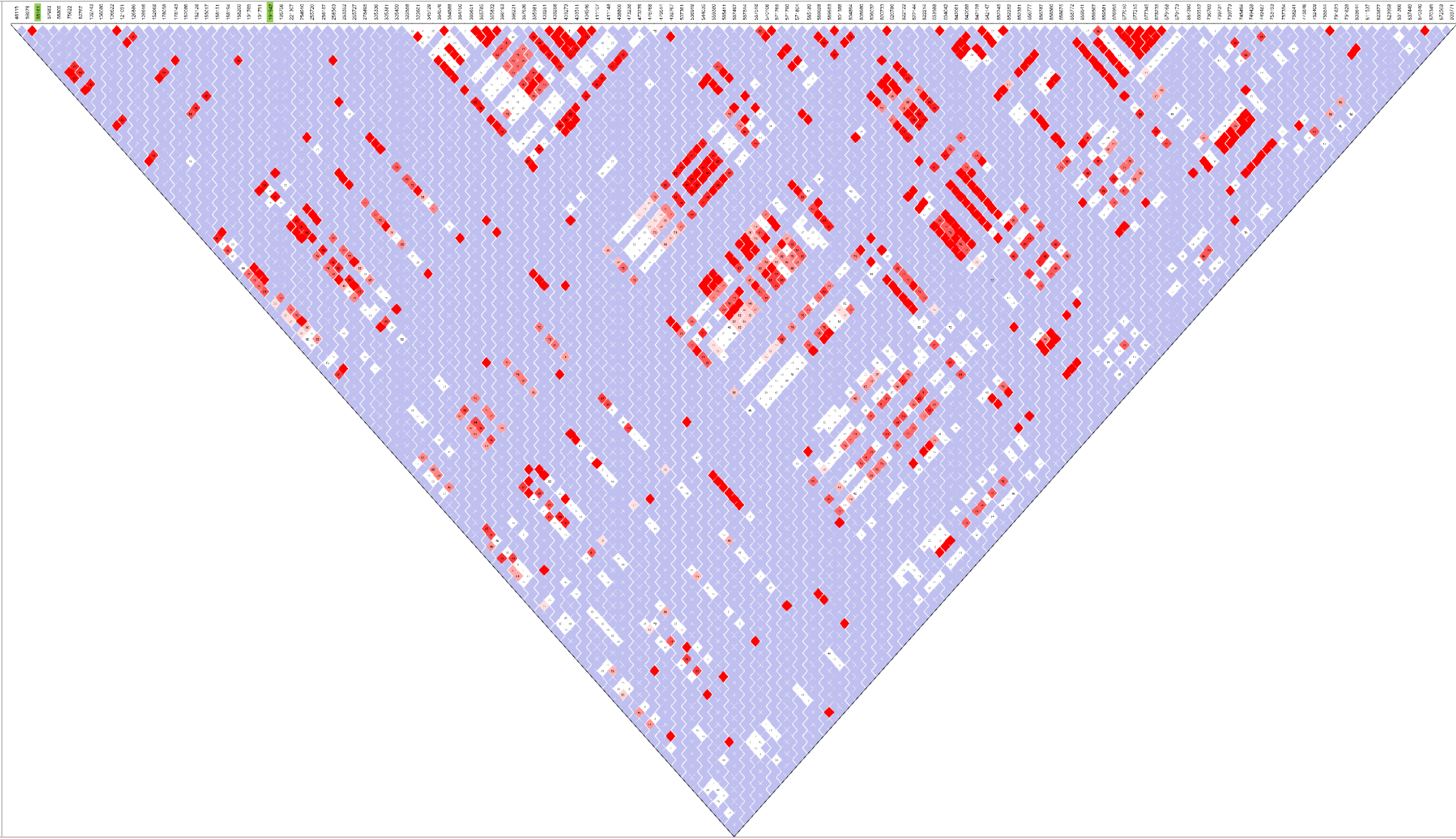
Plht-6-PC1-1/Prot-6-PC1-1



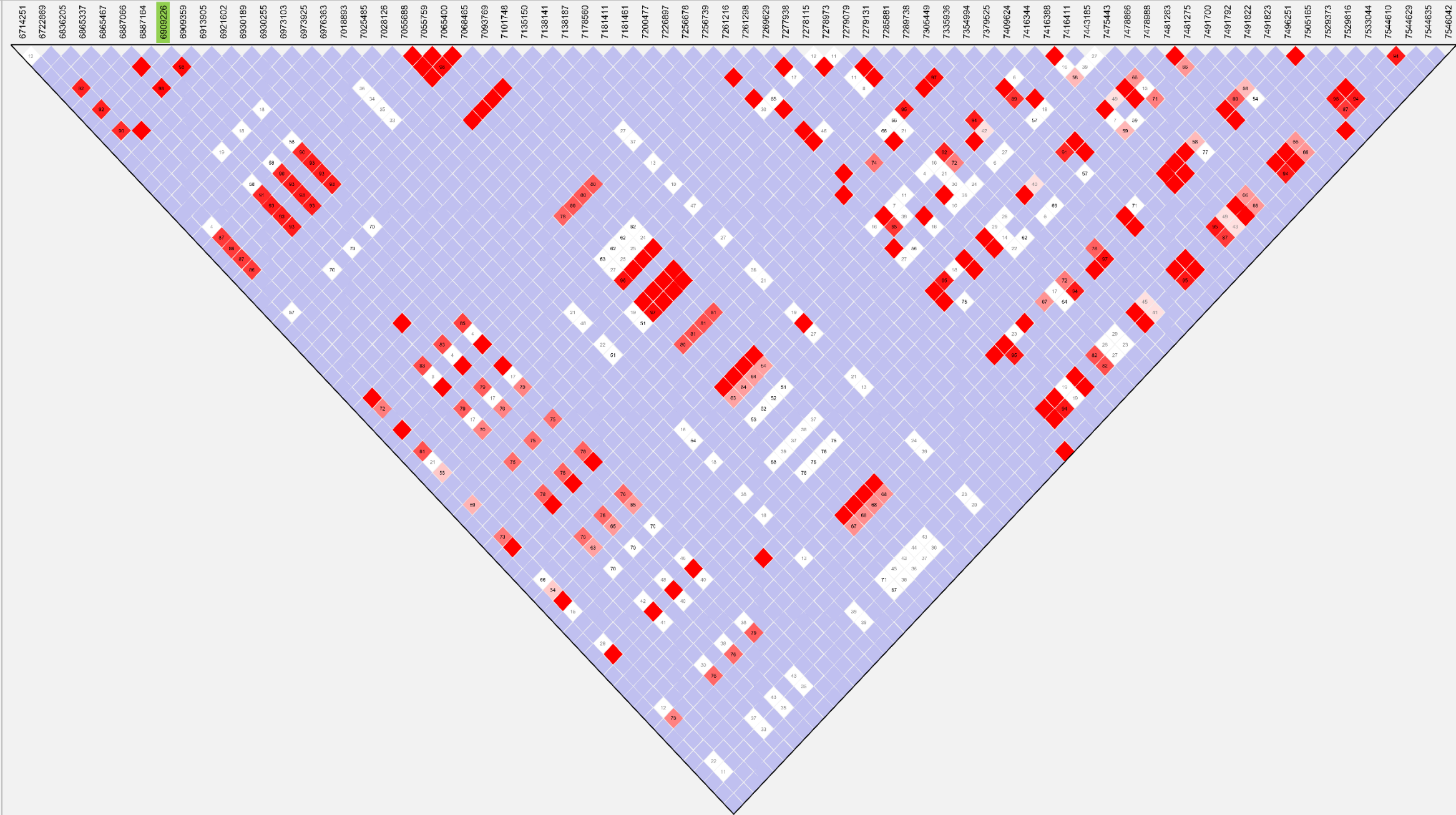
Plht-6-PC4-1



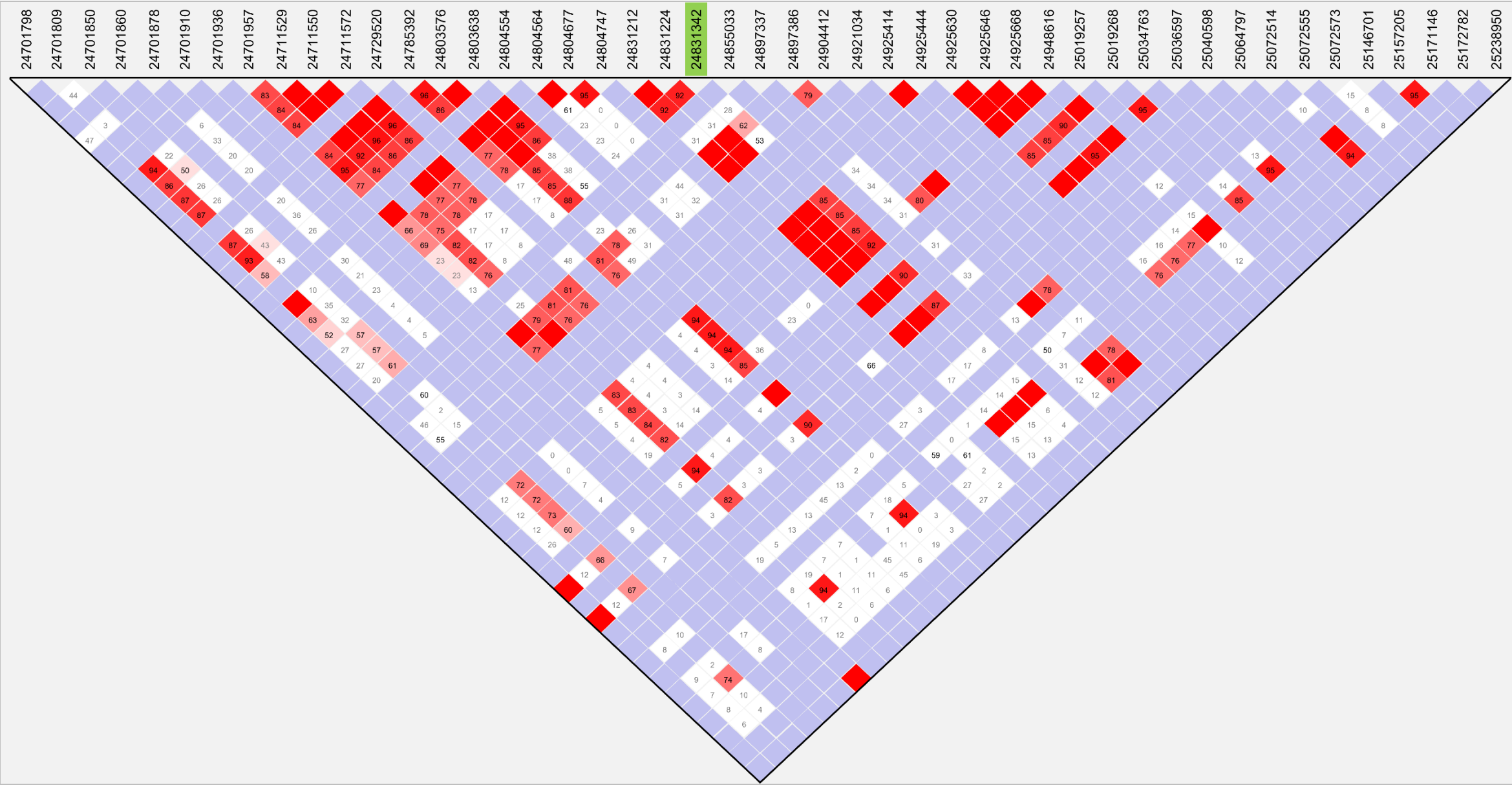
Prot-14-PC1-2/Oil-14-PC1-4/Prot-14-PC1-3



Mat-14-PC2-3



Mat-16-PC2-4



Prot-20-PC1-5

