

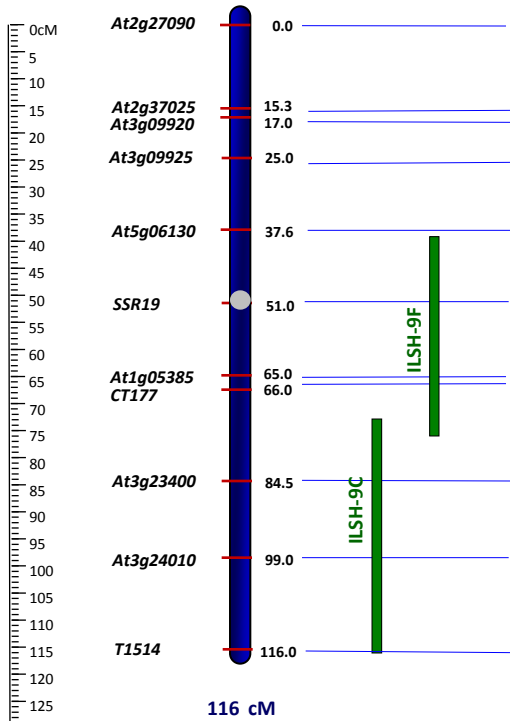
Identification, introgression and validation of fruit volatile QTLs from a red-fruited wild tomato species
Running title: Fruit volatile QTLs and their introgression in tomato

José L. Rambla¹, Aurora Medina¹, Asun Fernández-del-Carmen¹, Walter Barrantes^{1†}, Silvana Grandillo², Maria Cammareri², Gloria López-Casado⁴, Guillermo Rodrigo¹, Arancha Alonso⁵, Santiago García-Martínez⁵, Jaime Primo³, Juan J. Ruiz⁵, Rafael Fernández-Muñoz⁴, Antonio J. Monforte¹, Antonio Granell^{1*}

Supplementary figures

Figure S1. Schematic overview of tomato chromosomes 9 and 11 showing the map position of the four *Solanum habrochaites* LA1777 (SH) ILs analyzed. Map distances in centimorgan (cM) are indicated on the right side of each chromosome (based on the EXPEN 2000 mapping population (<http://solgenomics.net/>)). The total genetic length is given at the bottom of each chromosome. Marker names are indicated on the left side of each chromosome. COSII markers are identified by the name of the most similar Arabidopsis gene. The SH ILs are indicated with green bars on the right of each chromosome. The borders of the bars are arbitrarily drawn midway between markers positive and negative for the introgressed SH segment.

Chr. 9



Chr. 11

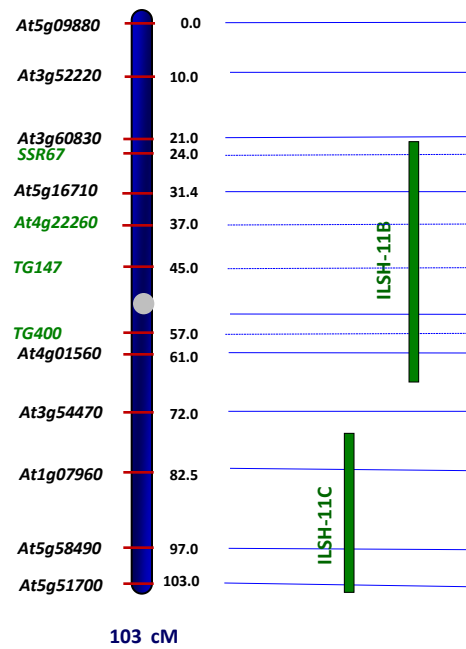
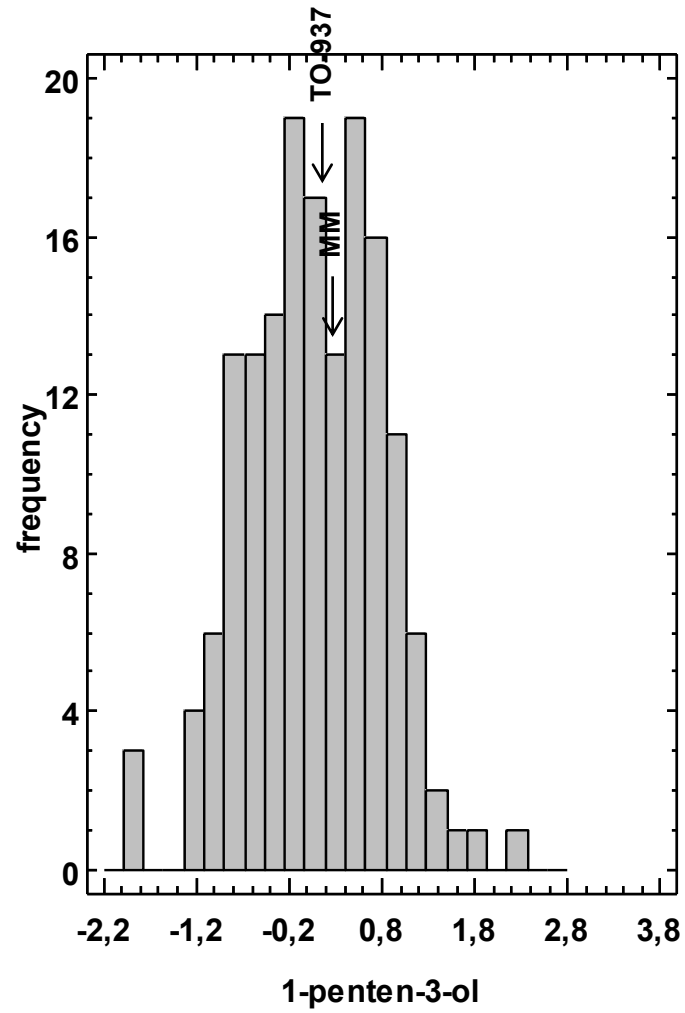


Figure S2. Histogram of the distribution of each volatile compound in the RIL population in seasons 1, 2 and 3.

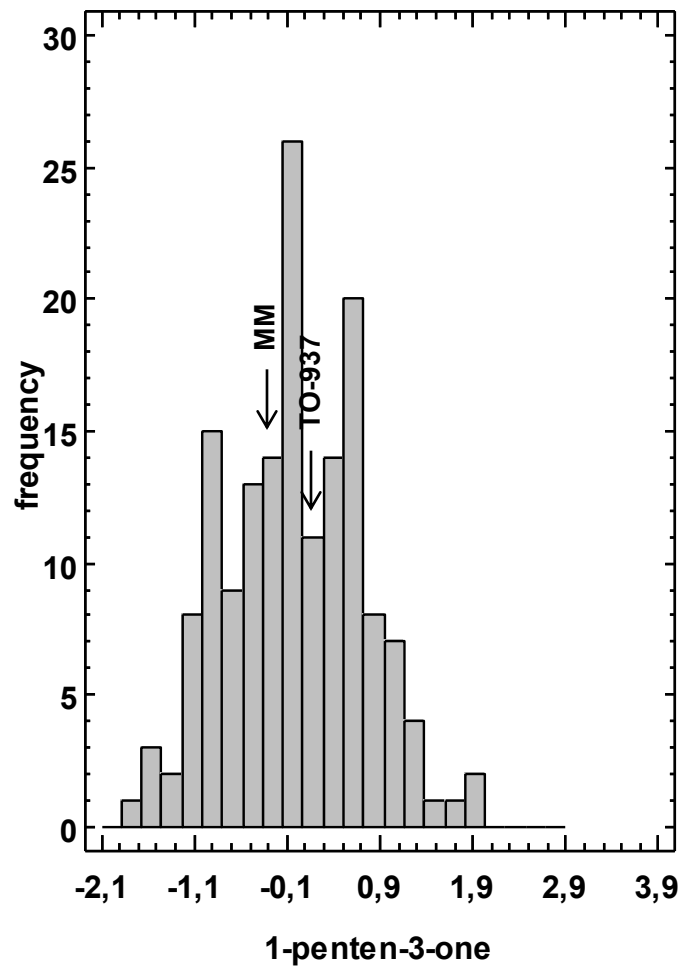
RILs season 1

Histogram



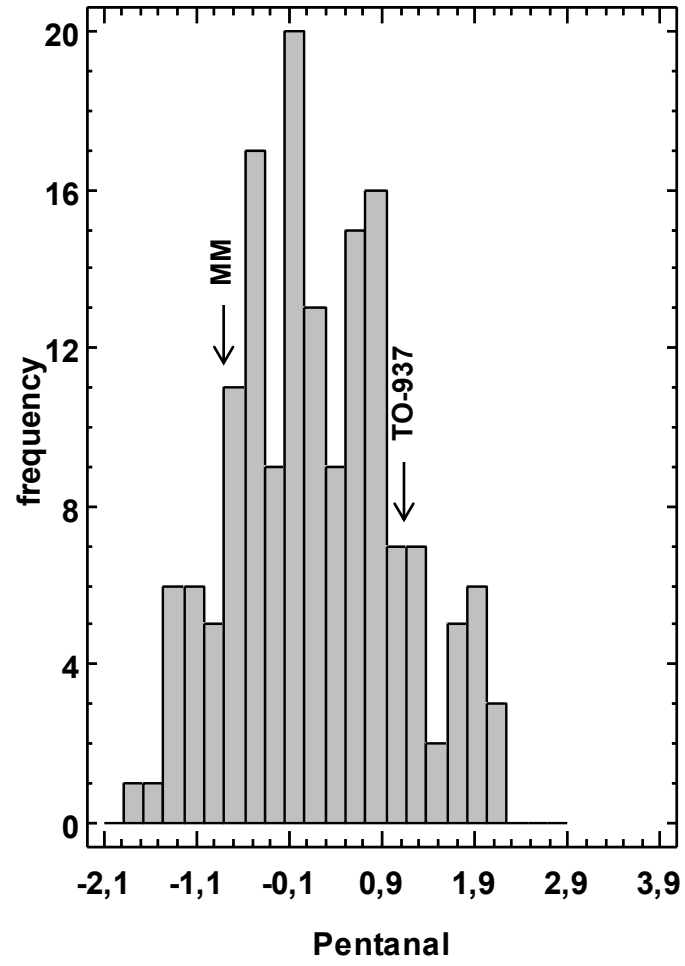
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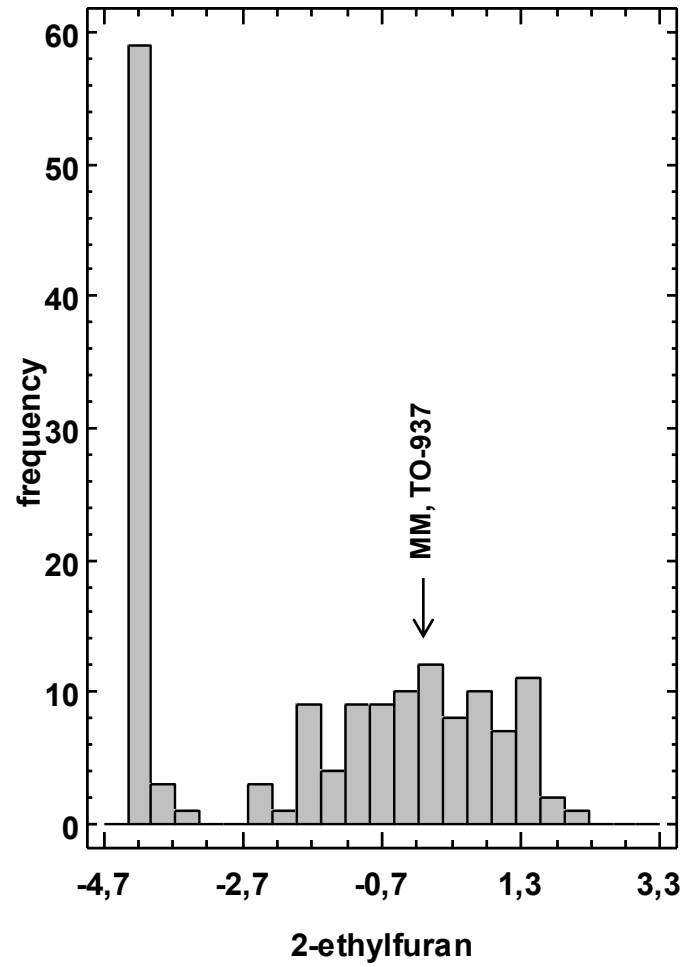
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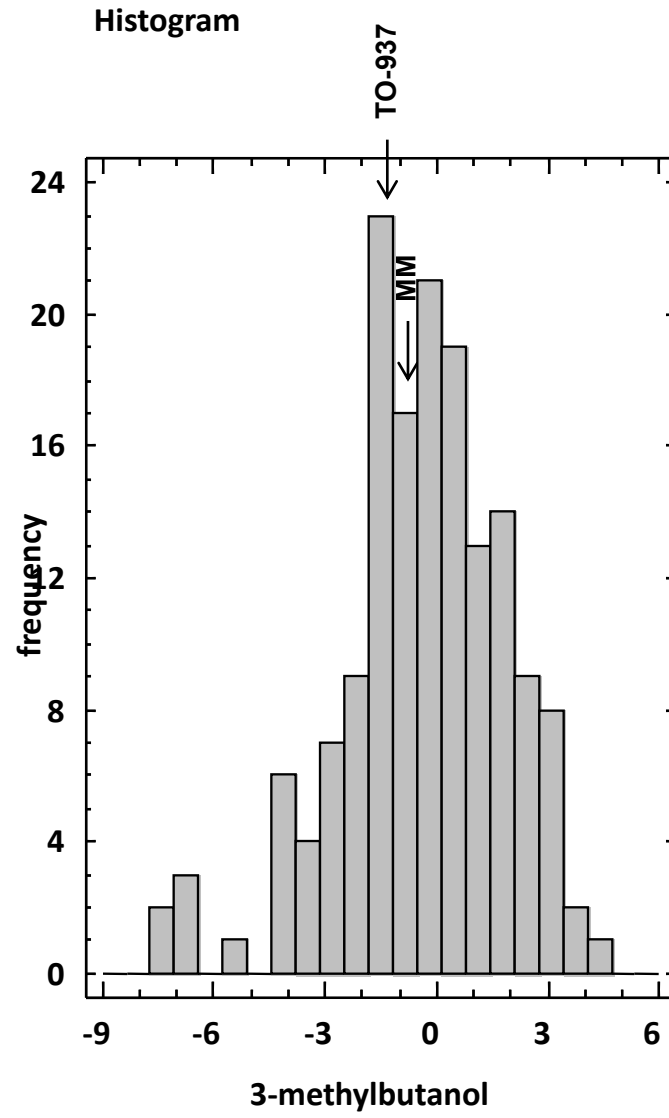


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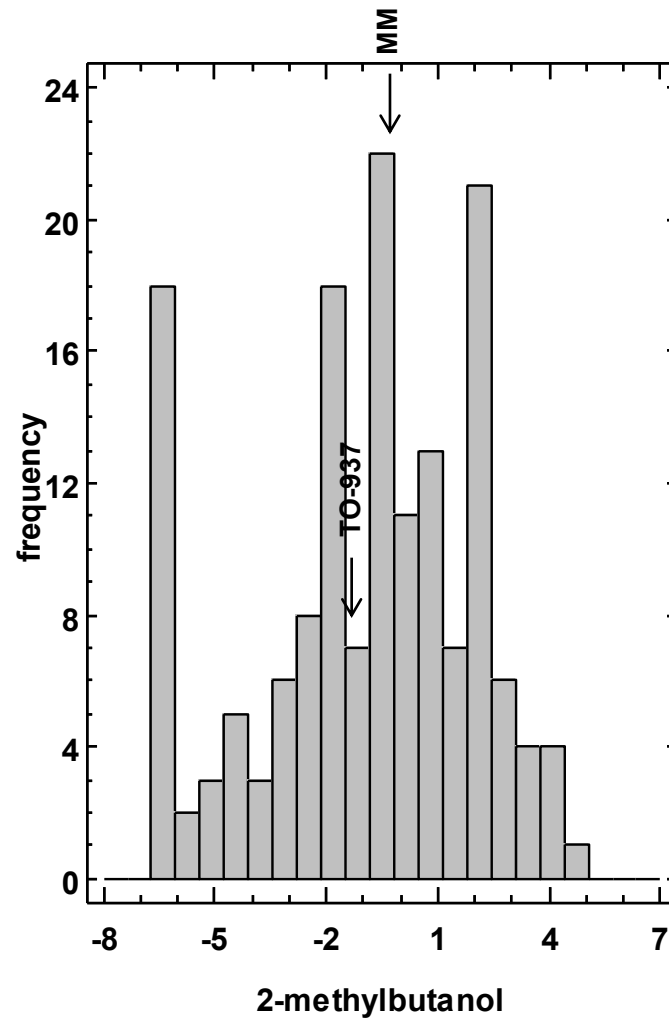


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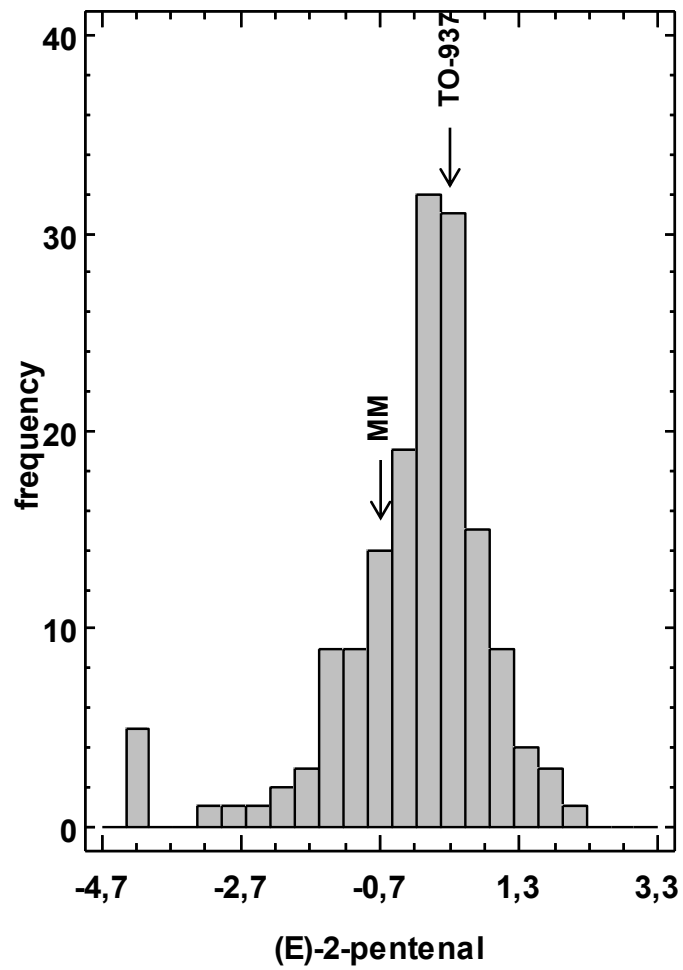
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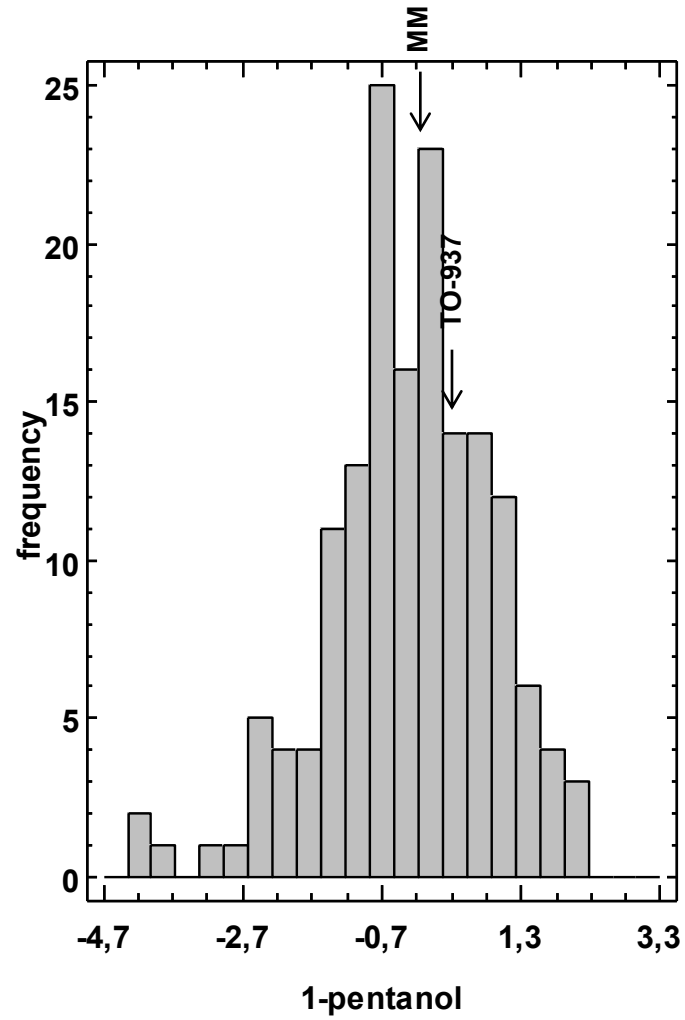
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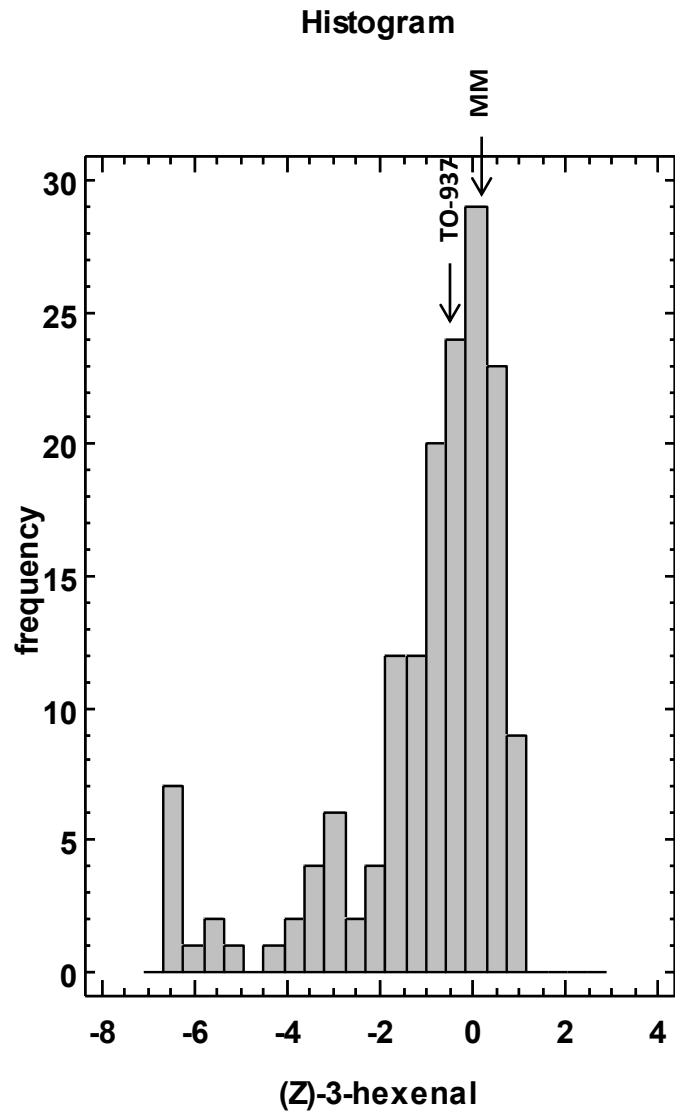


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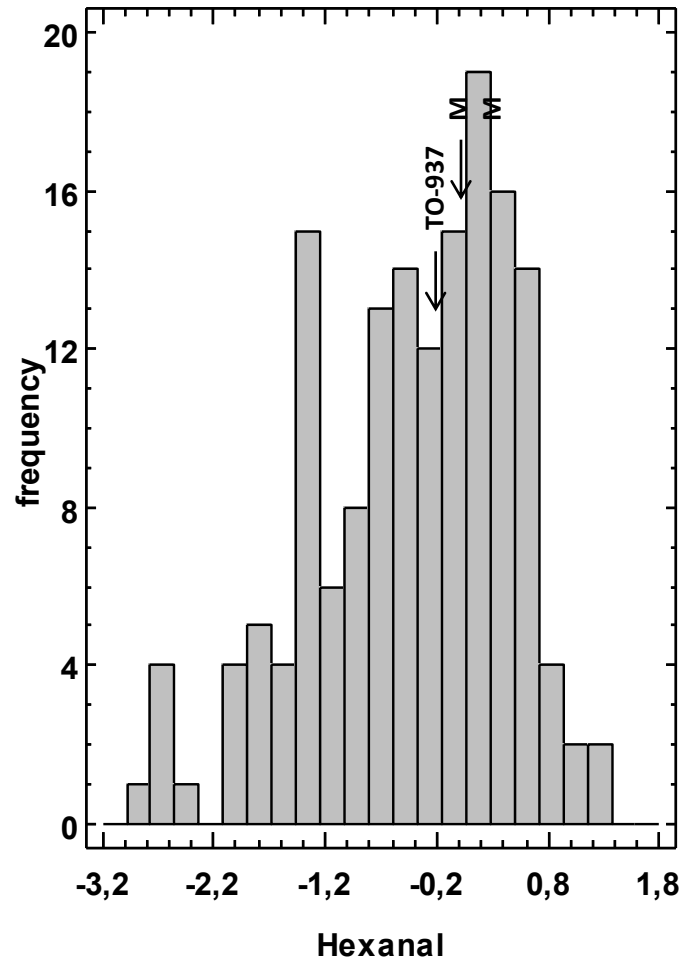


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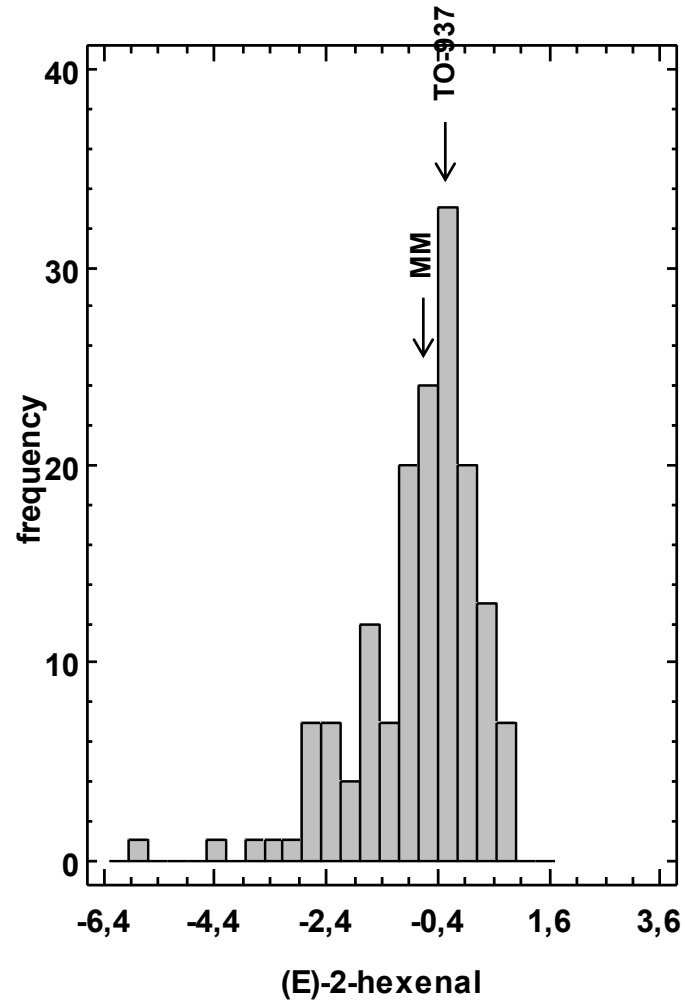
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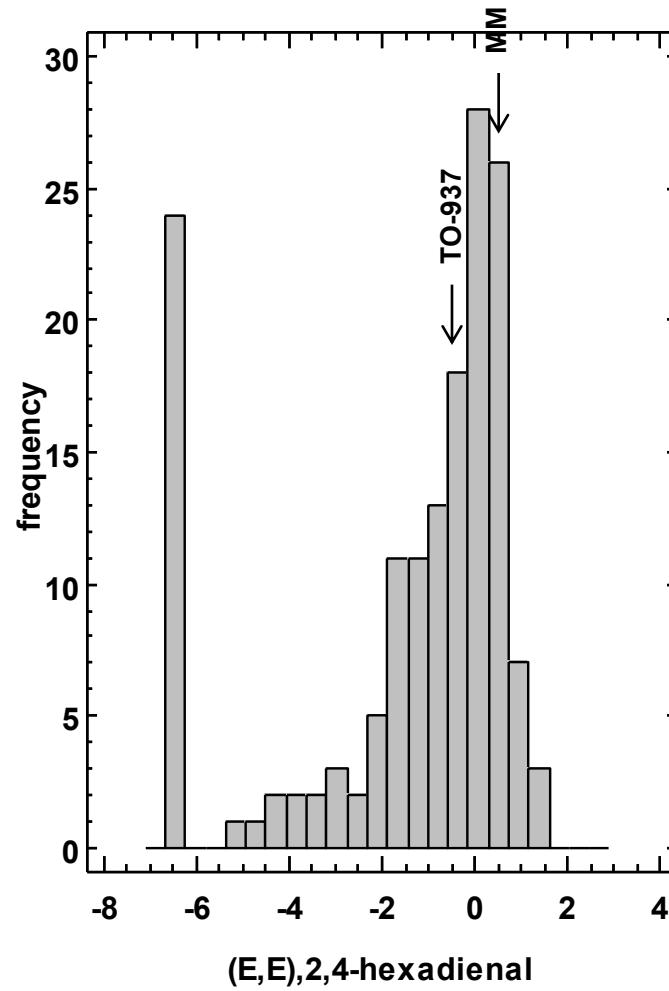
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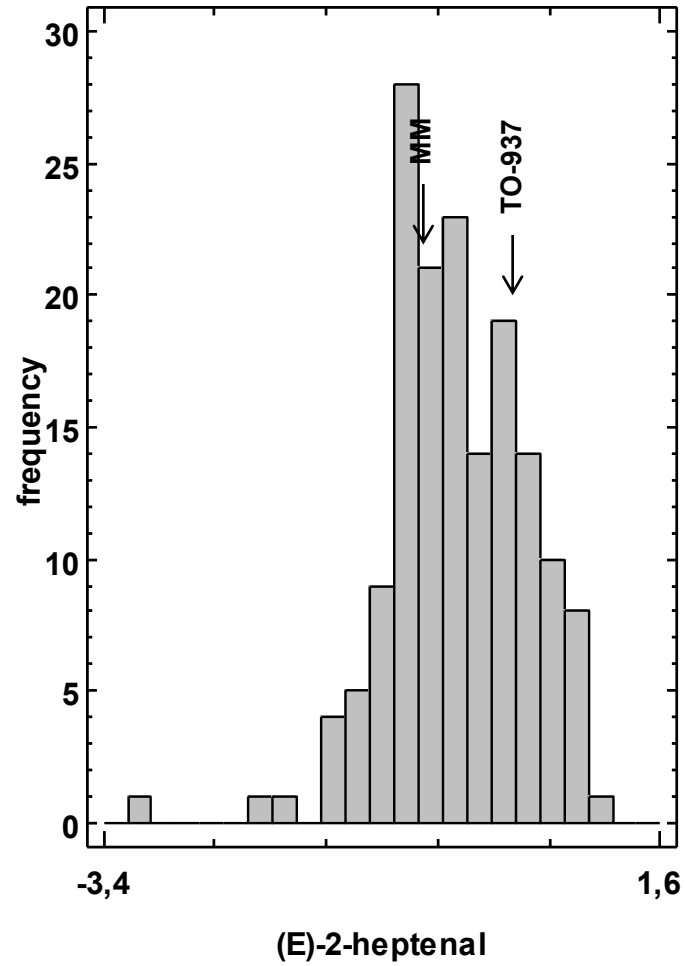
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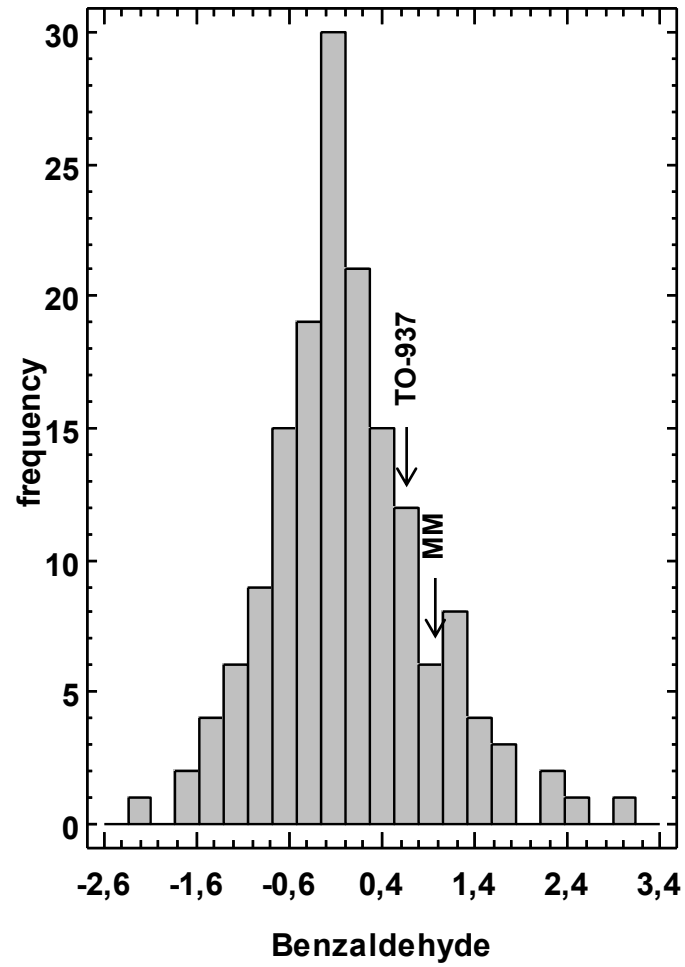
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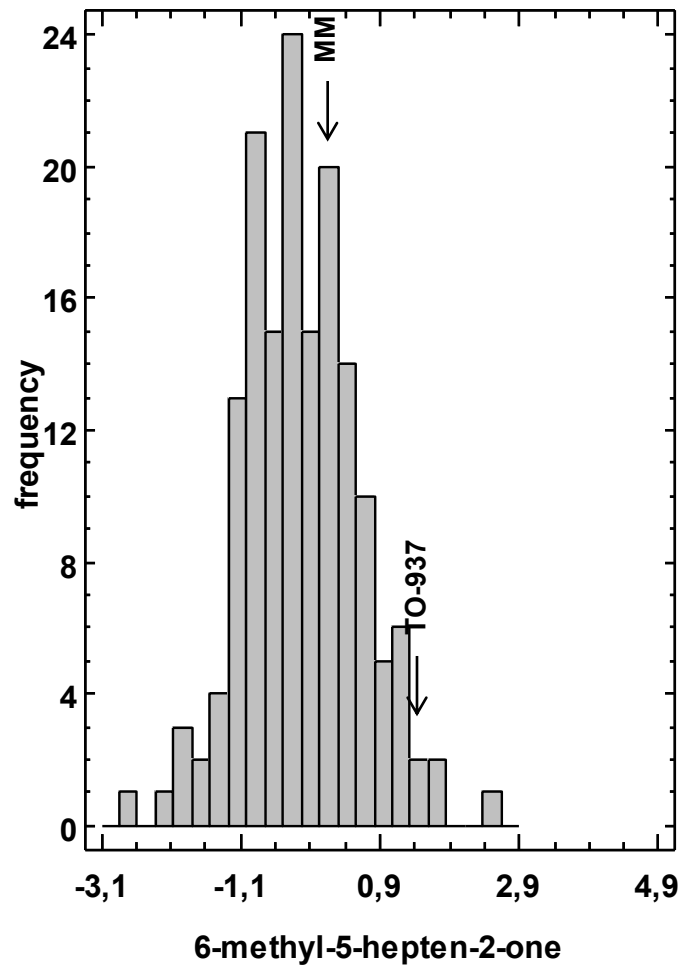
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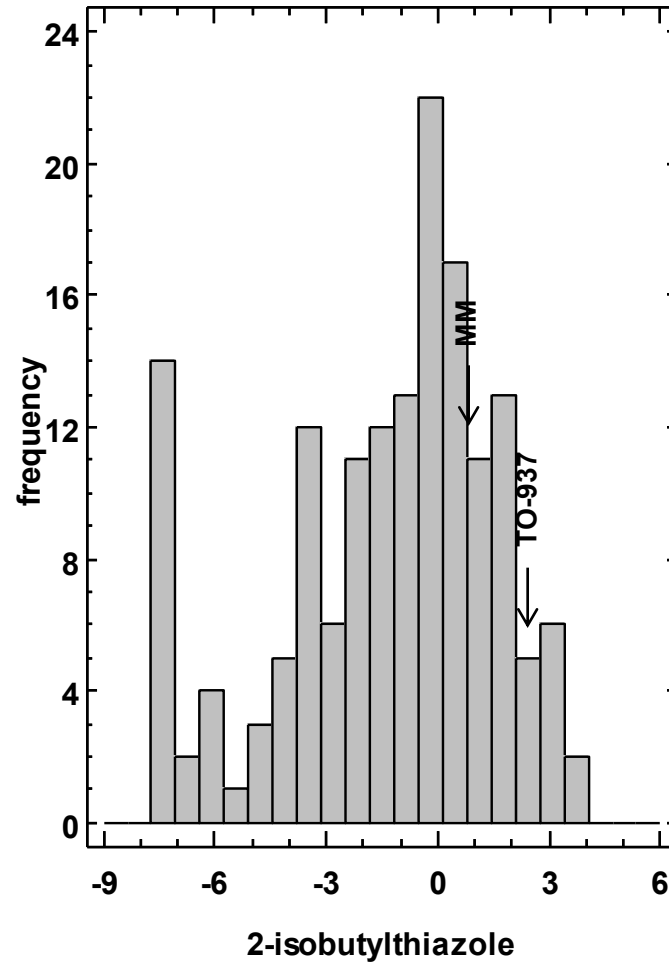
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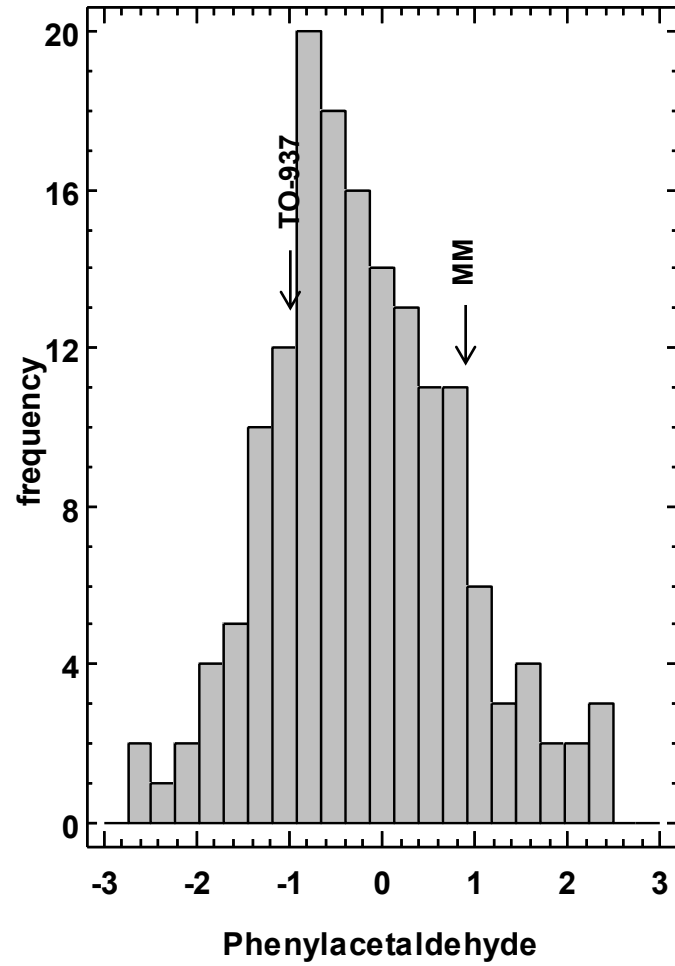
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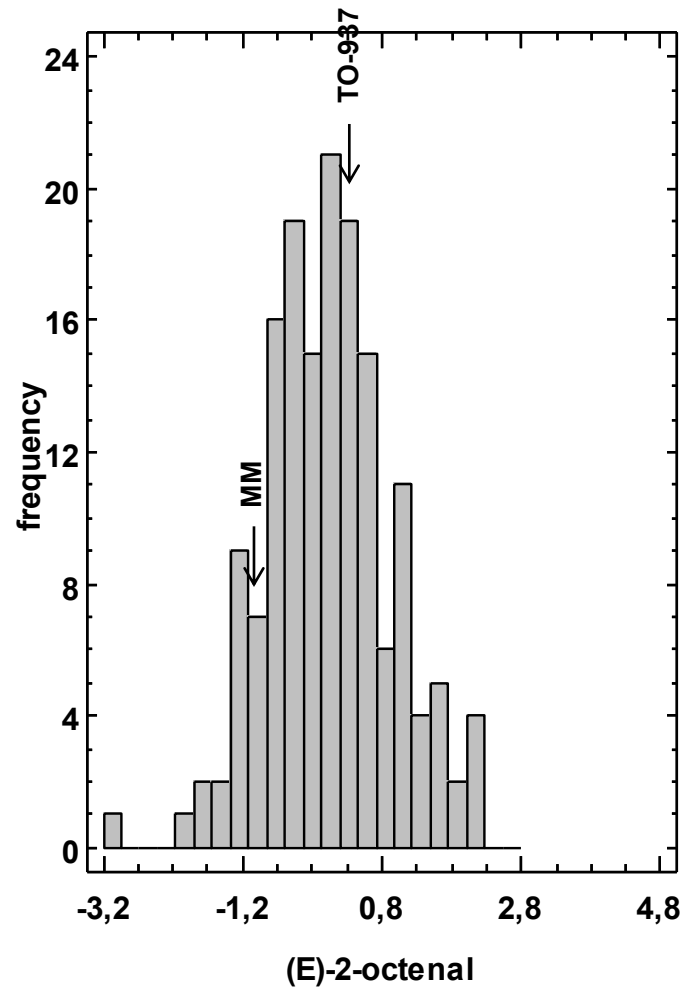
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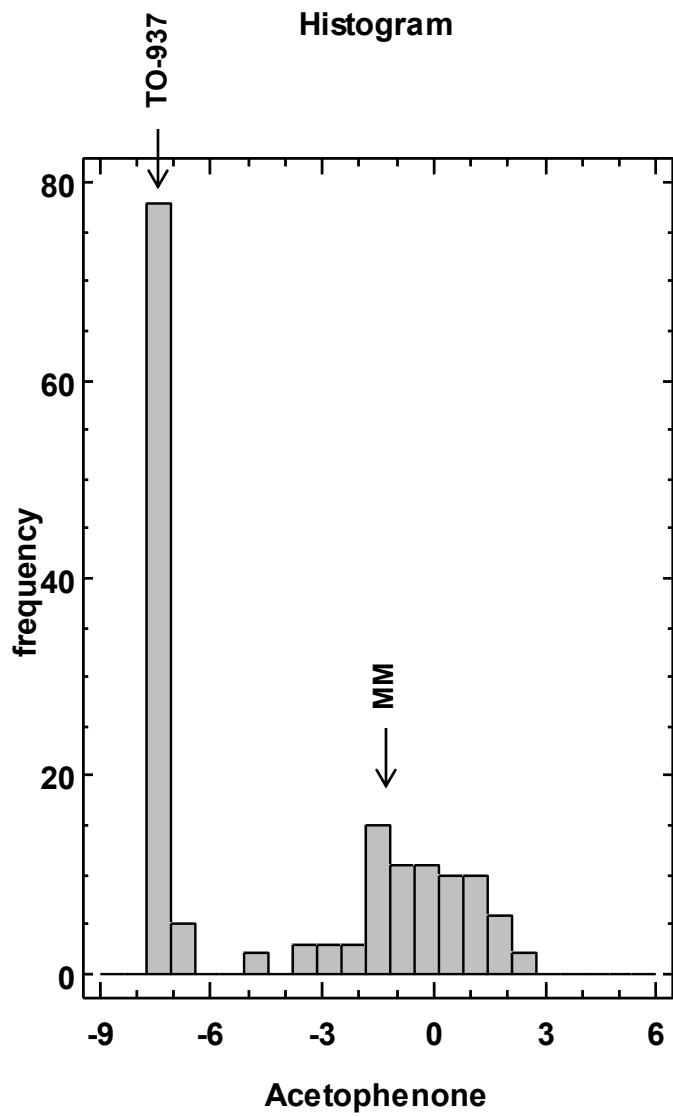


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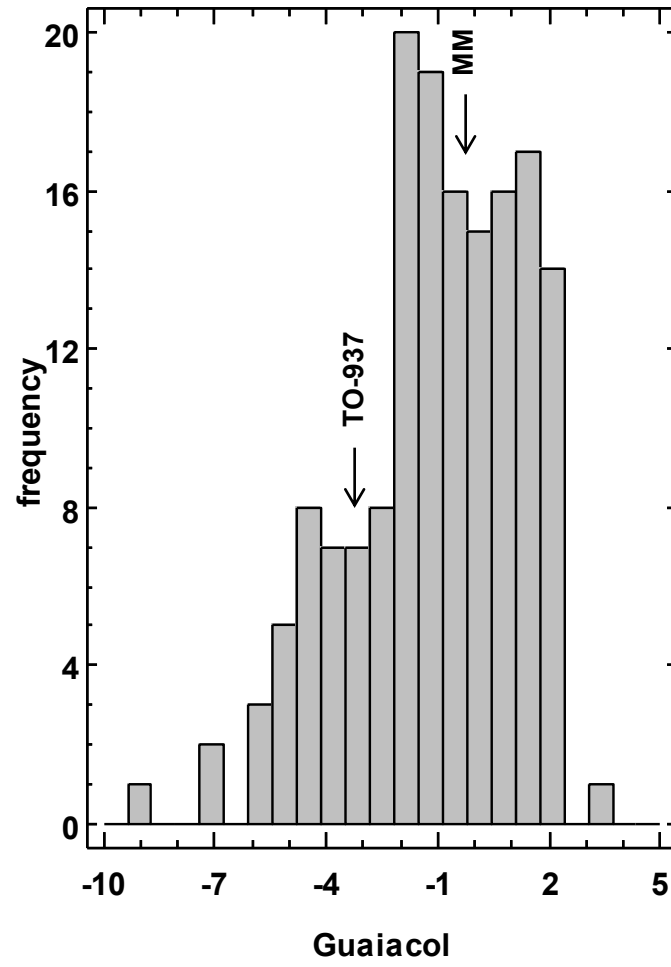


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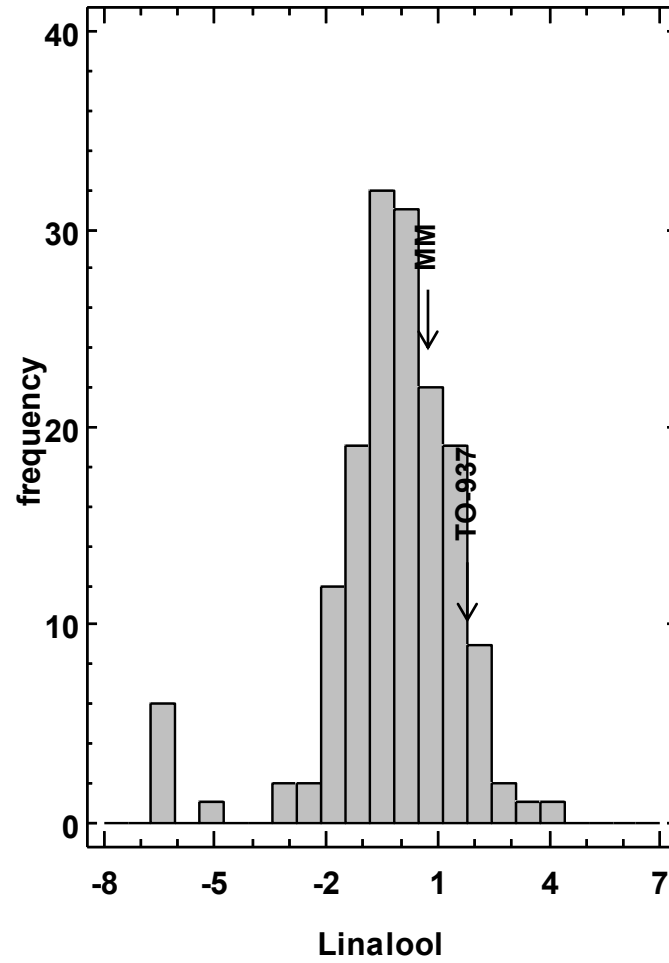
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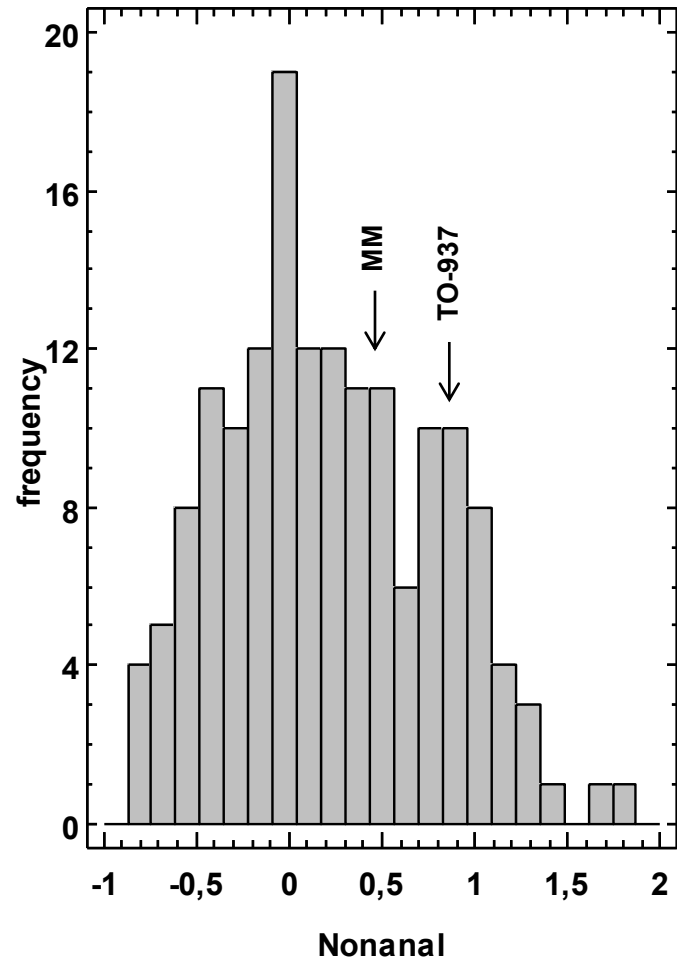
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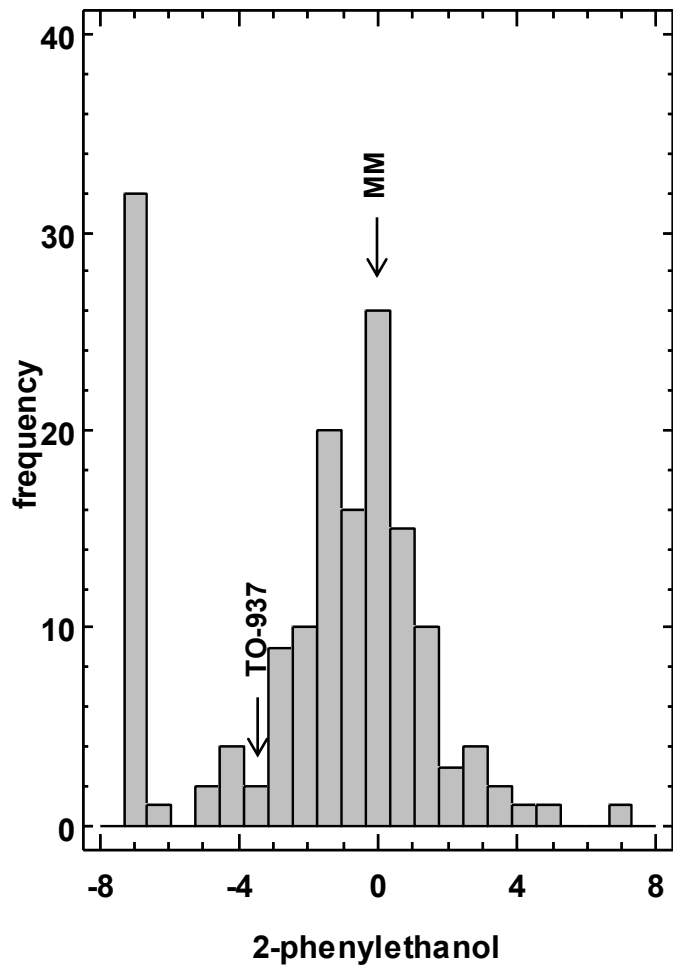
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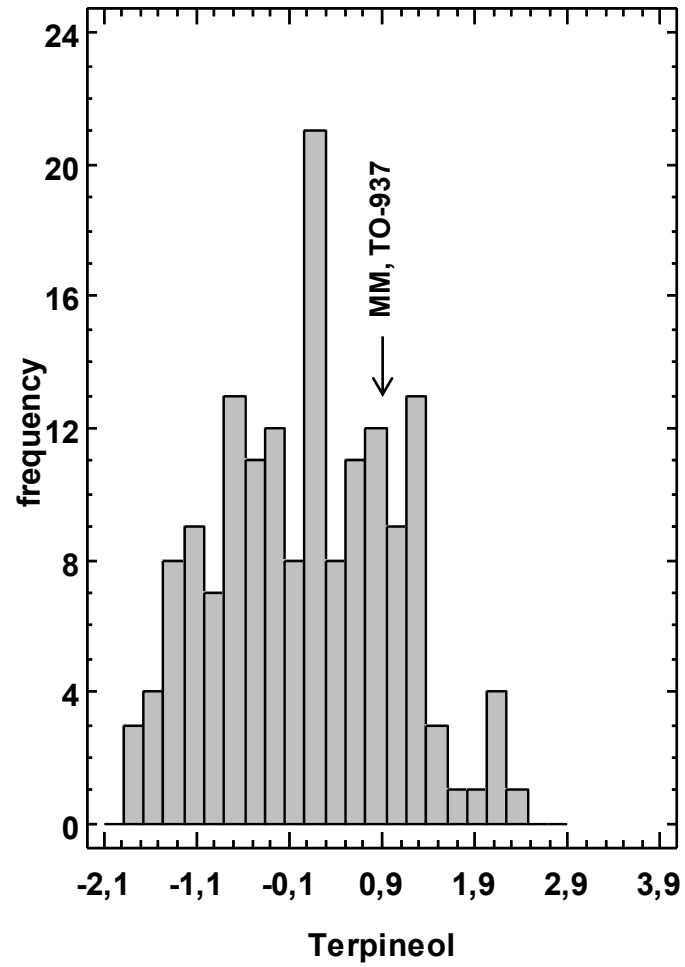
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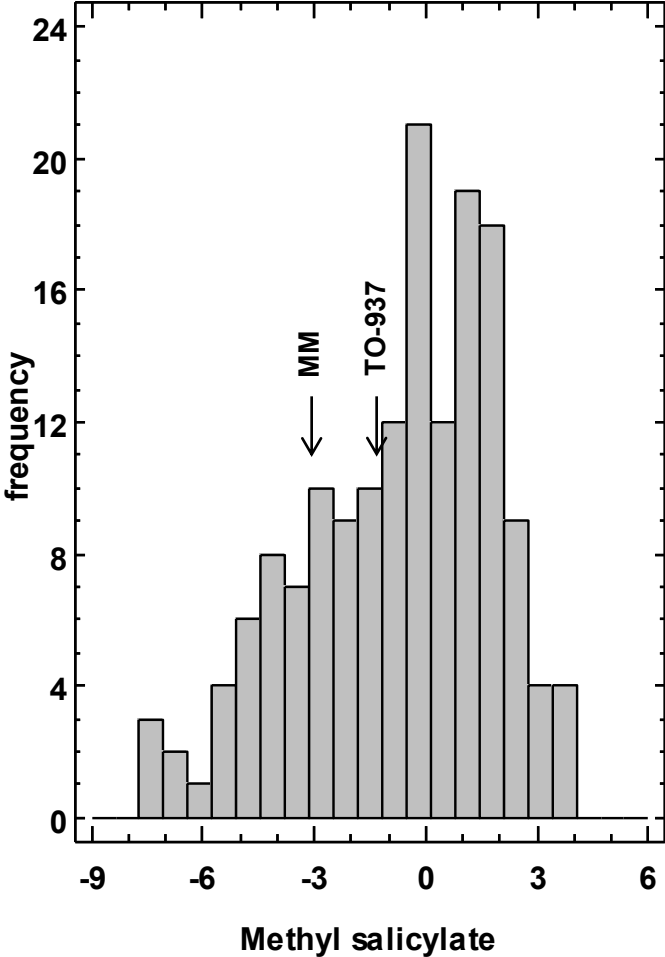
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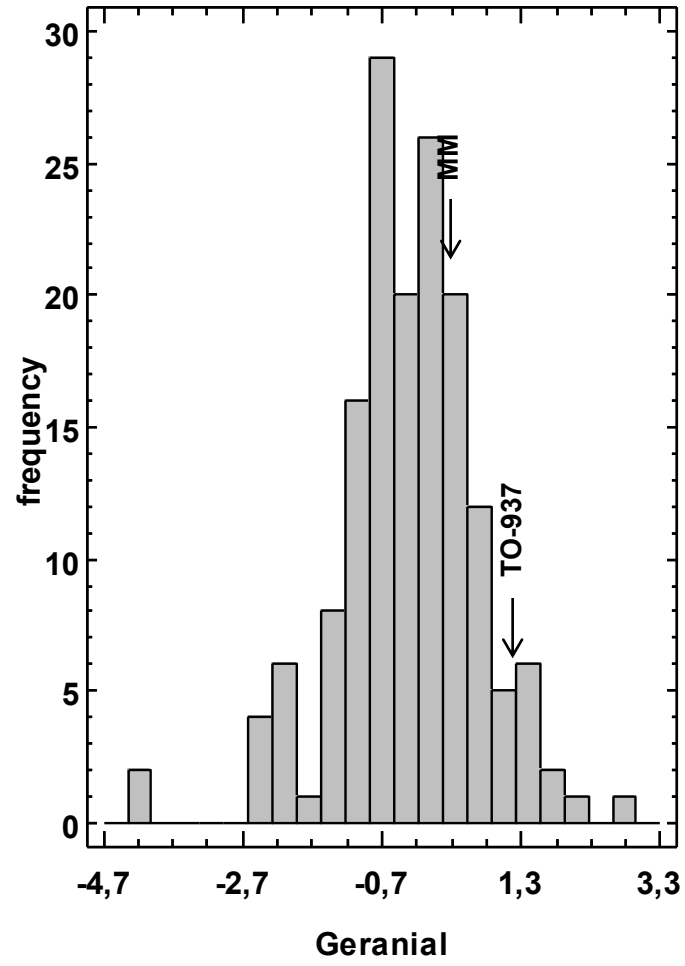
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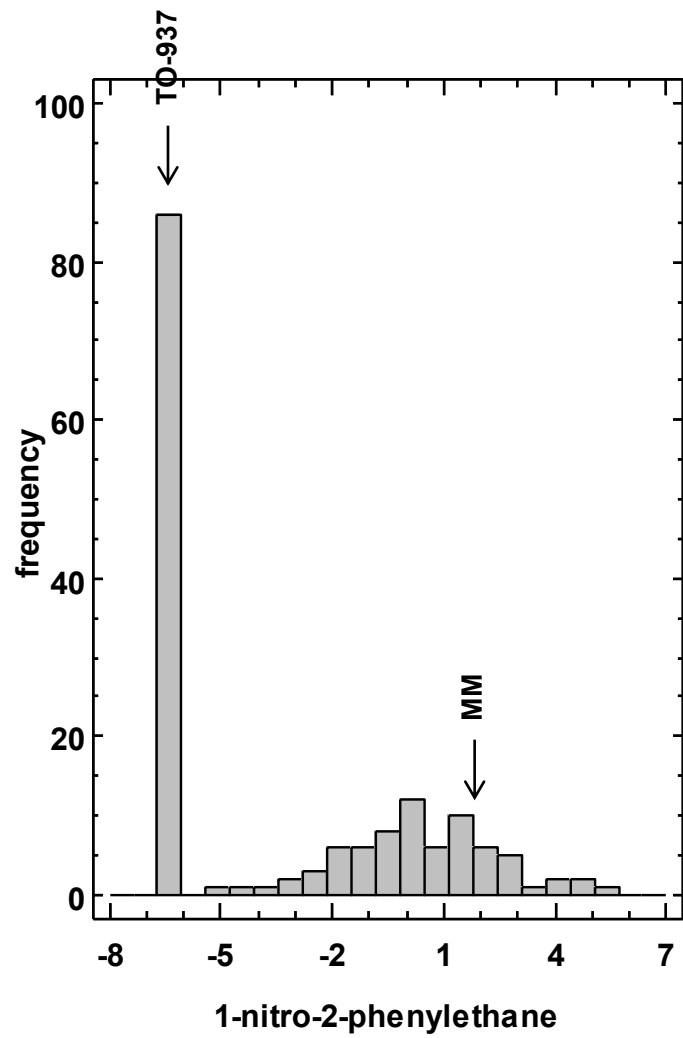
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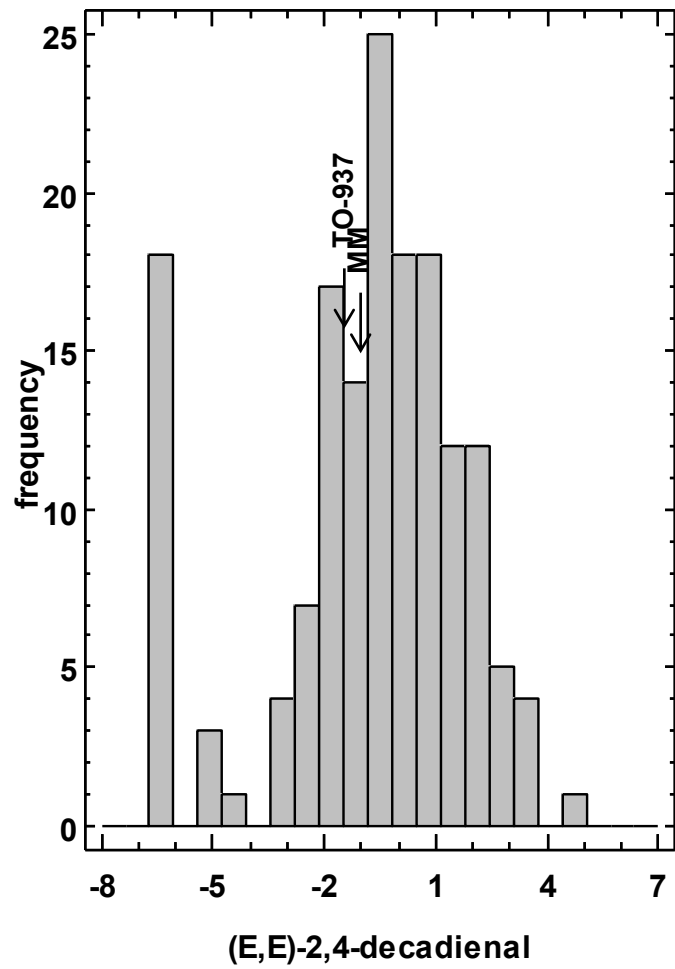
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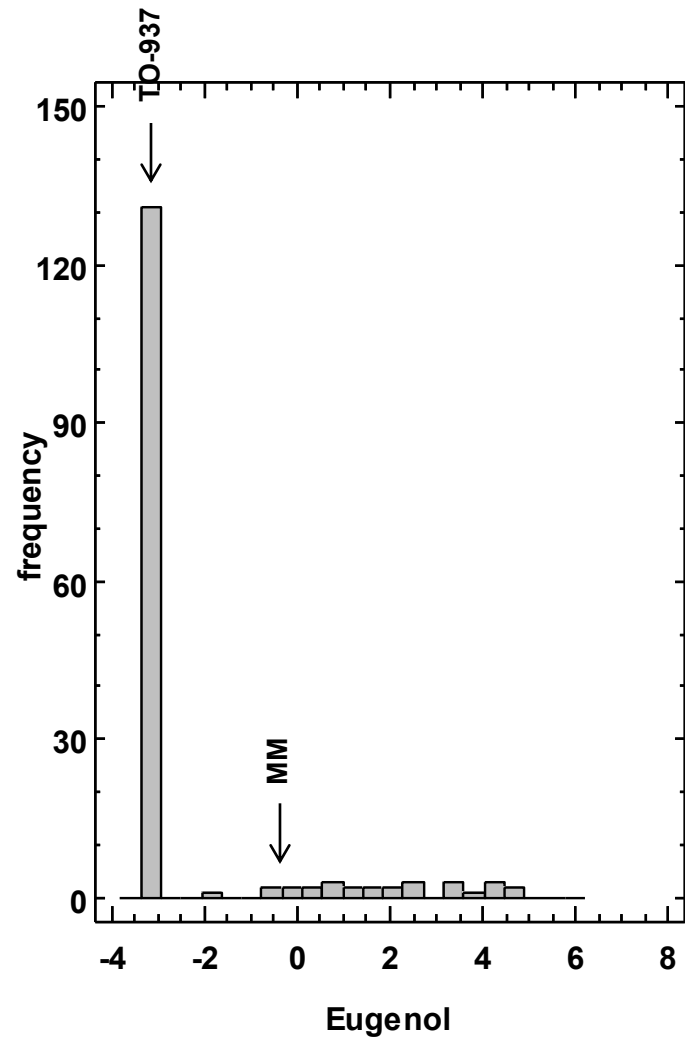
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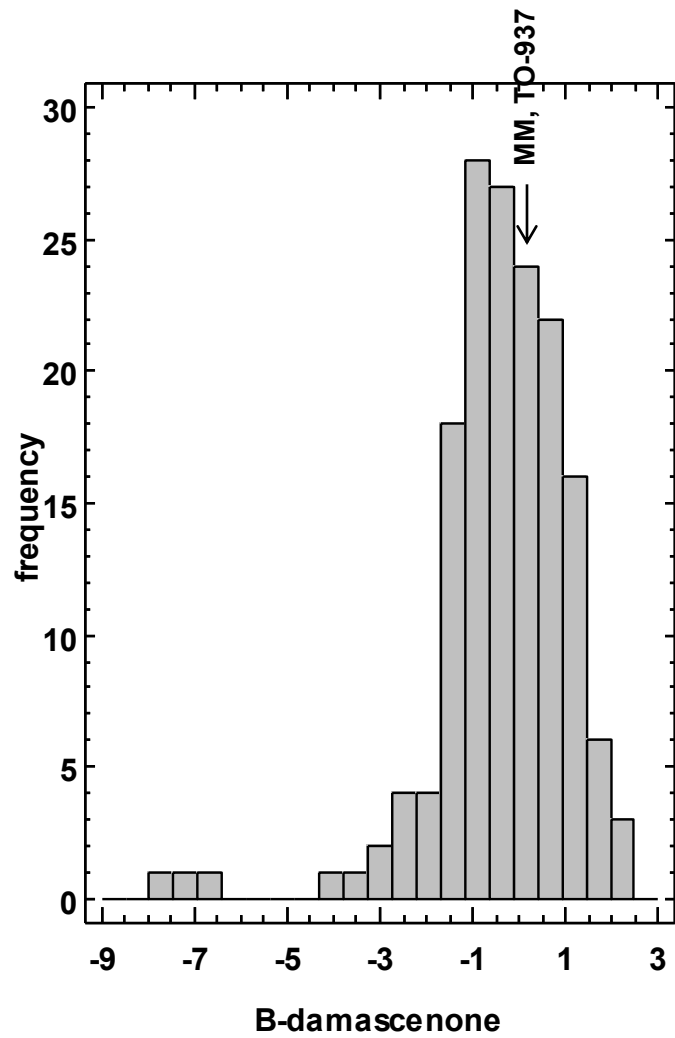
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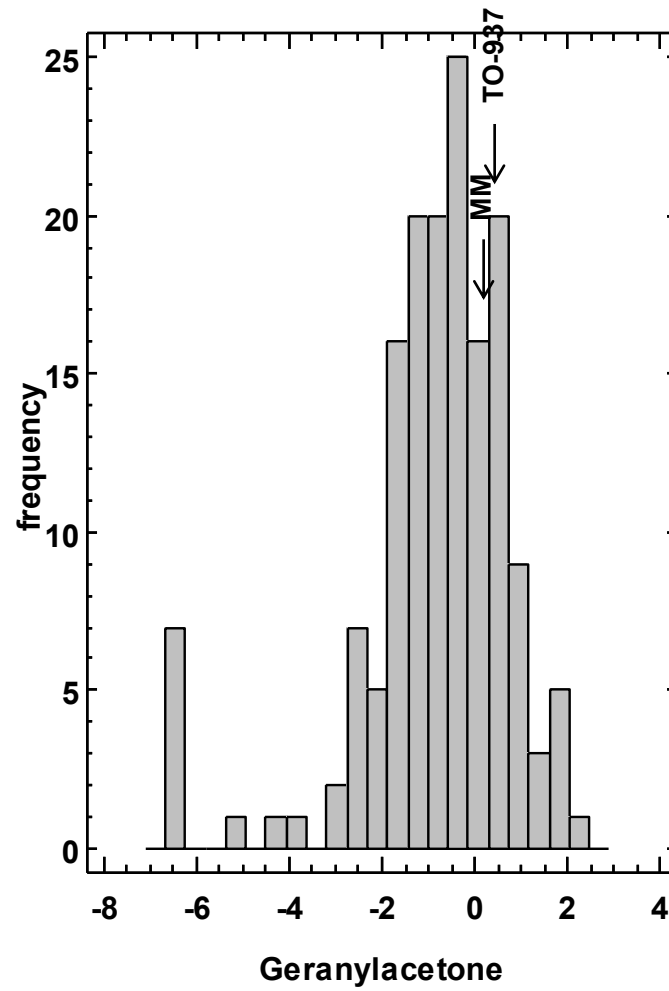
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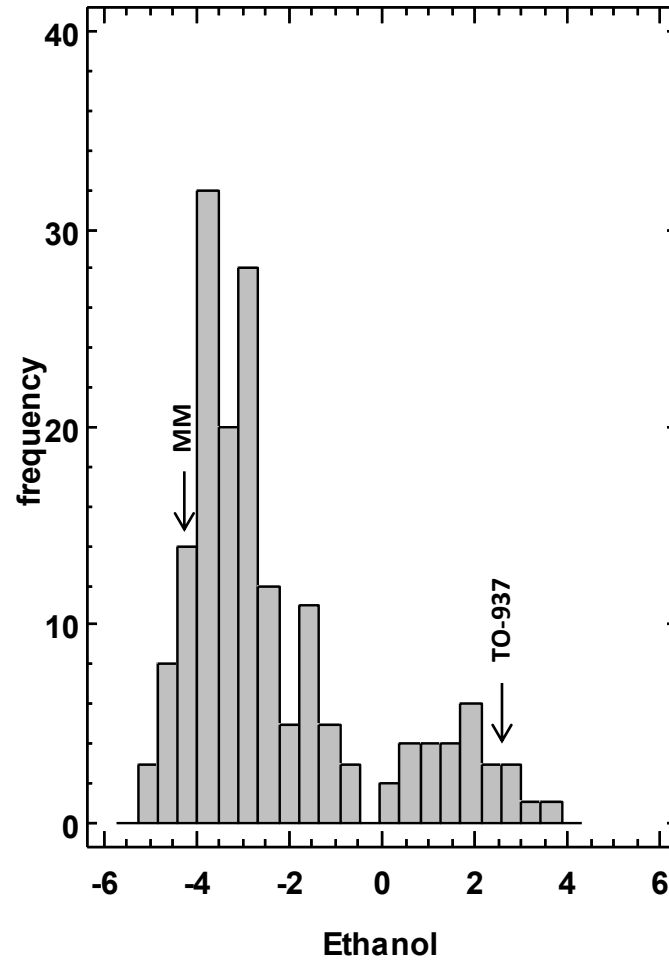
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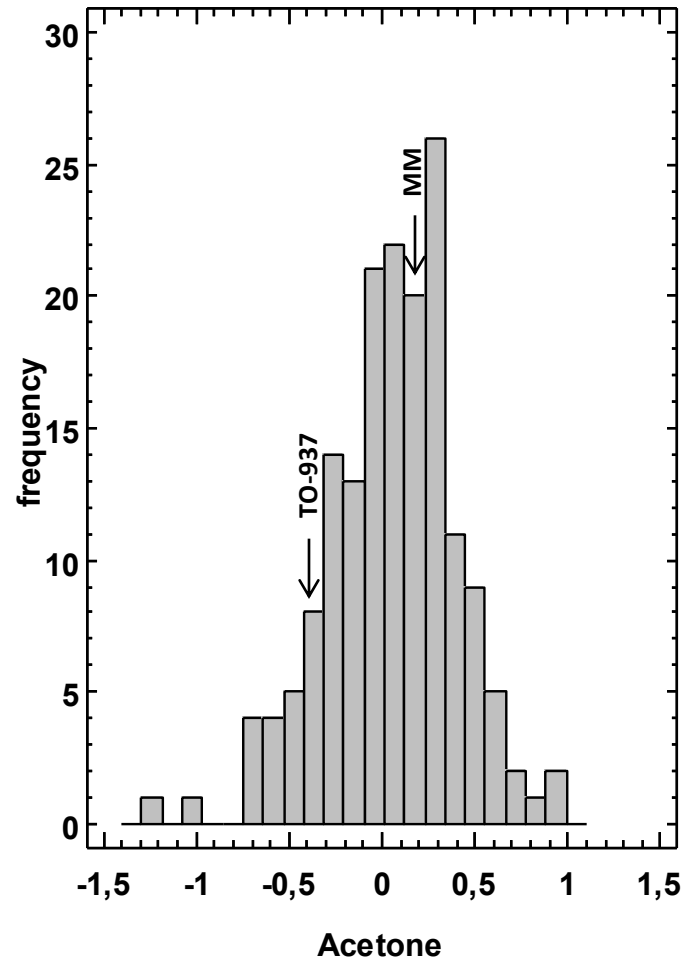
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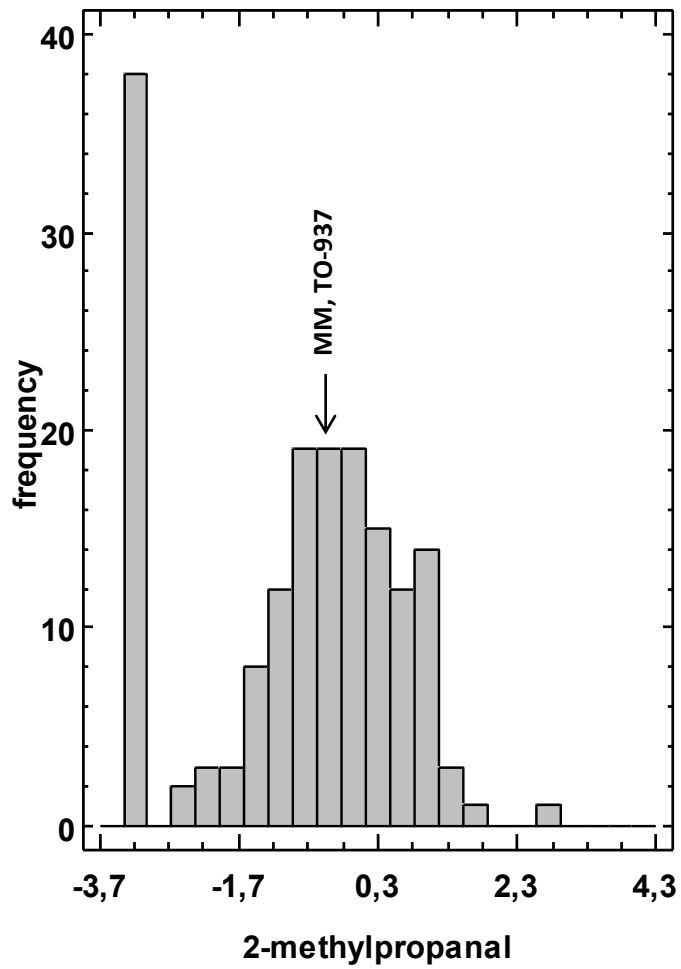
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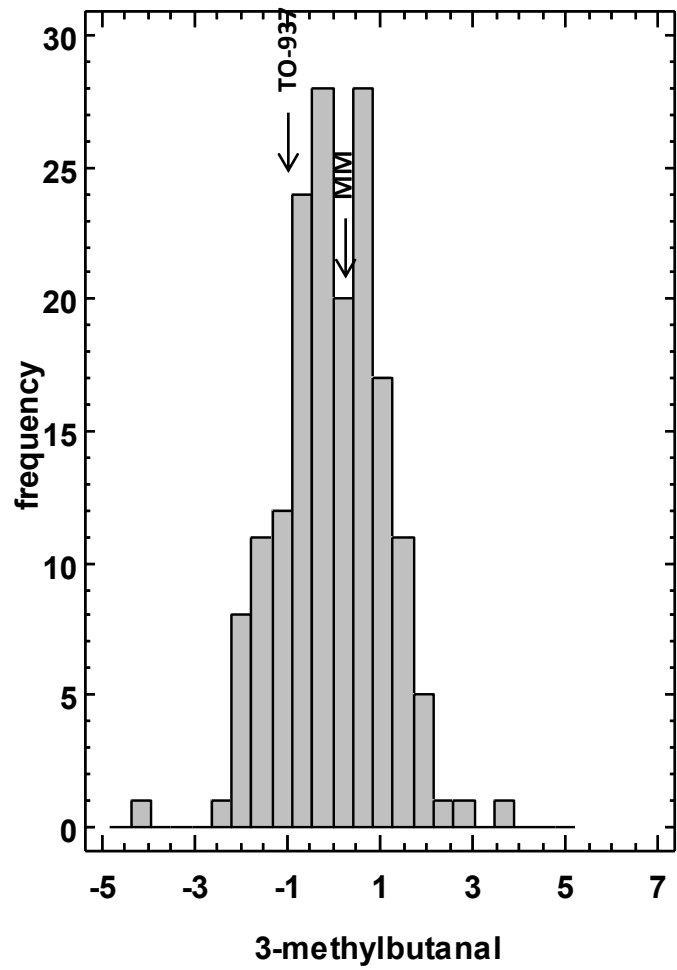
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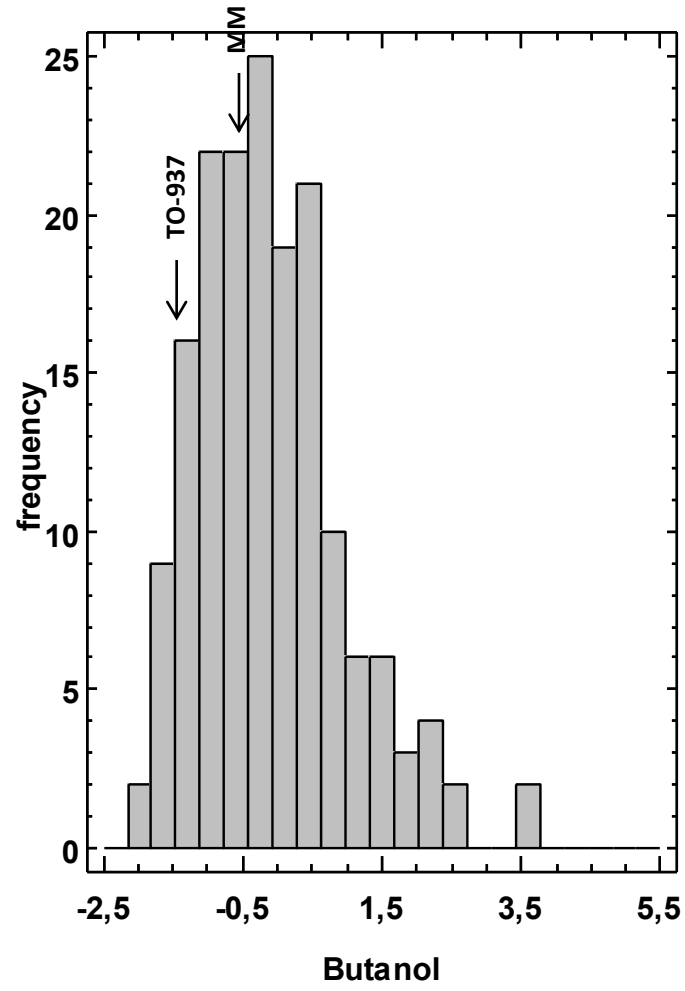
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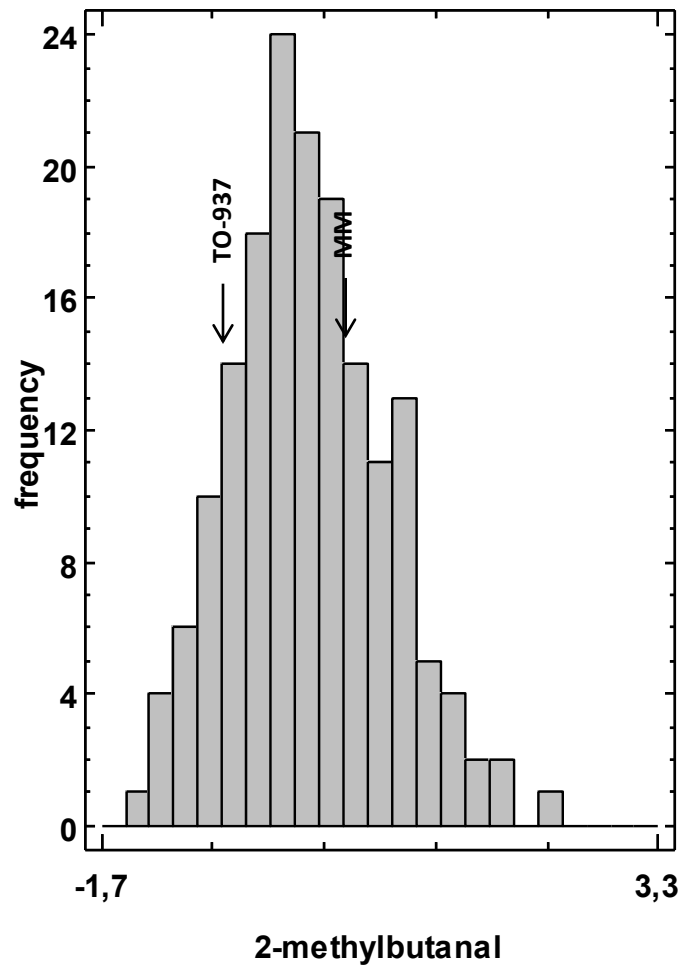
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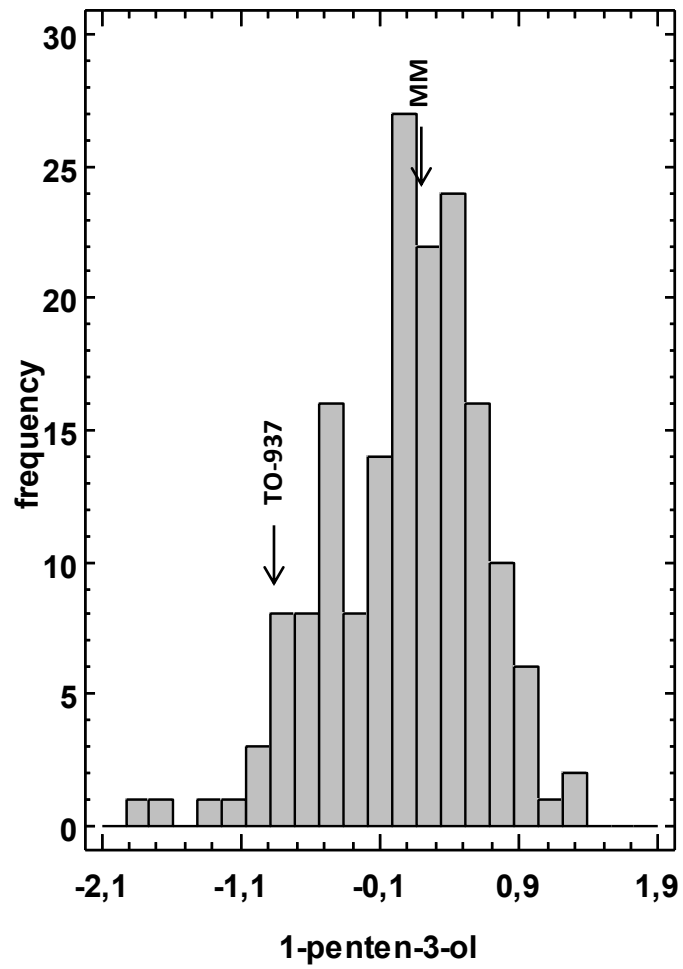
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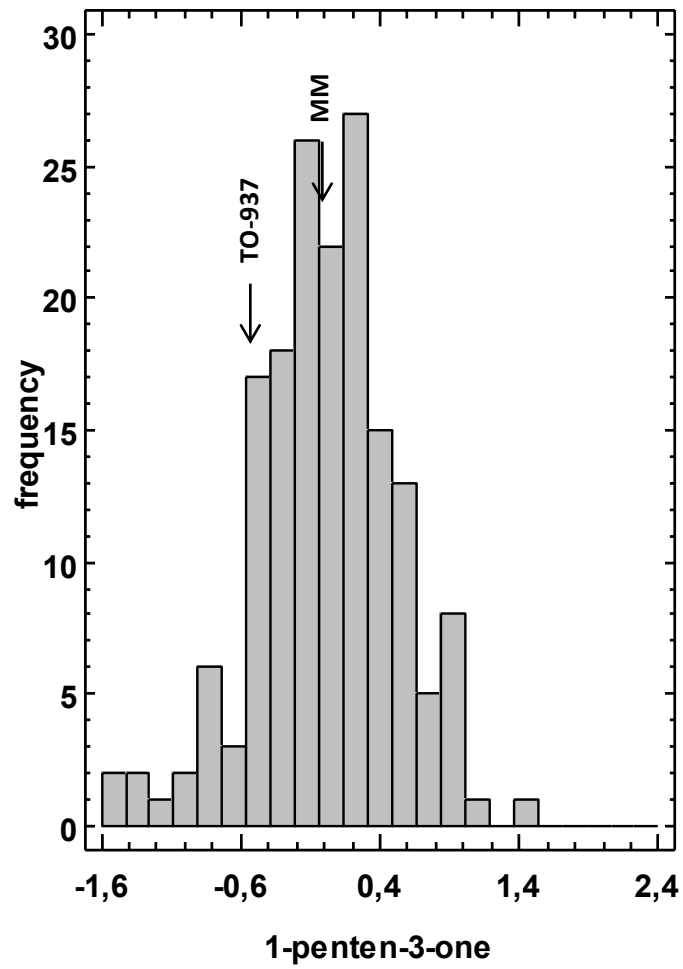
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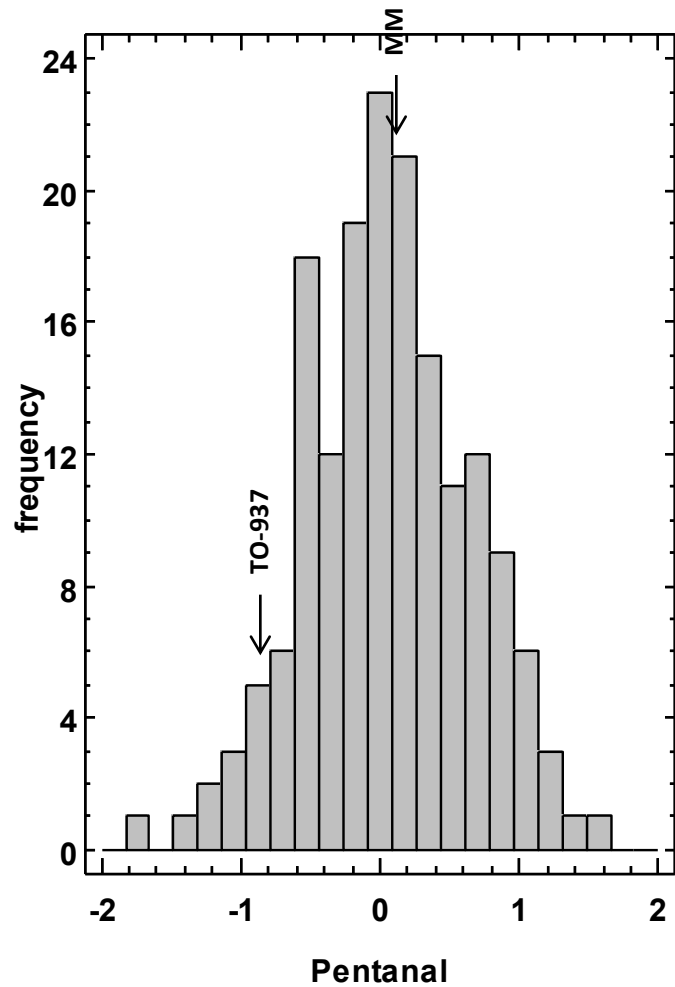
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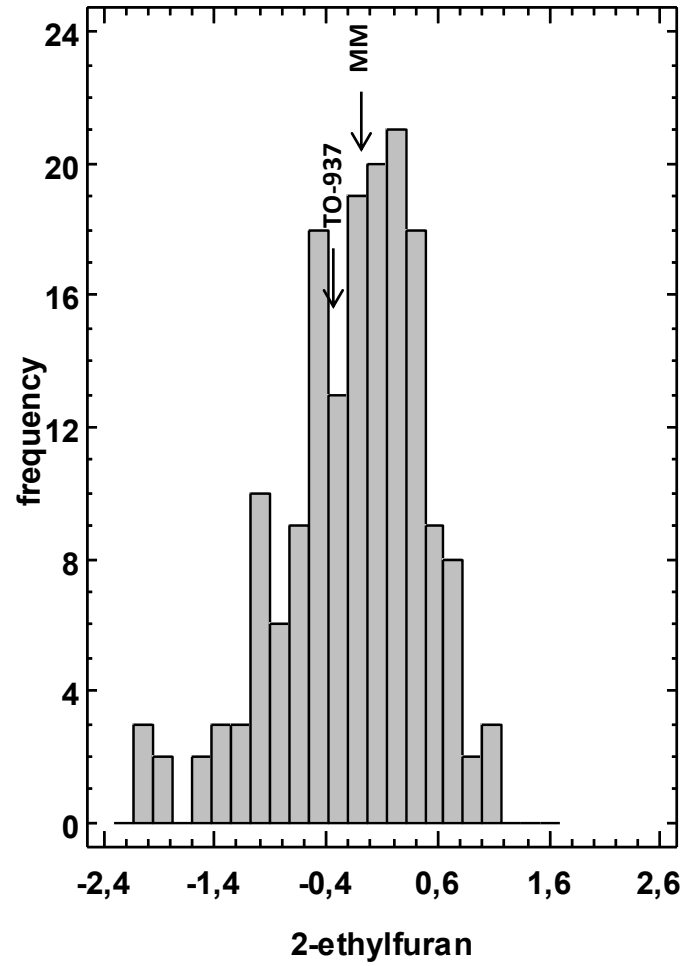
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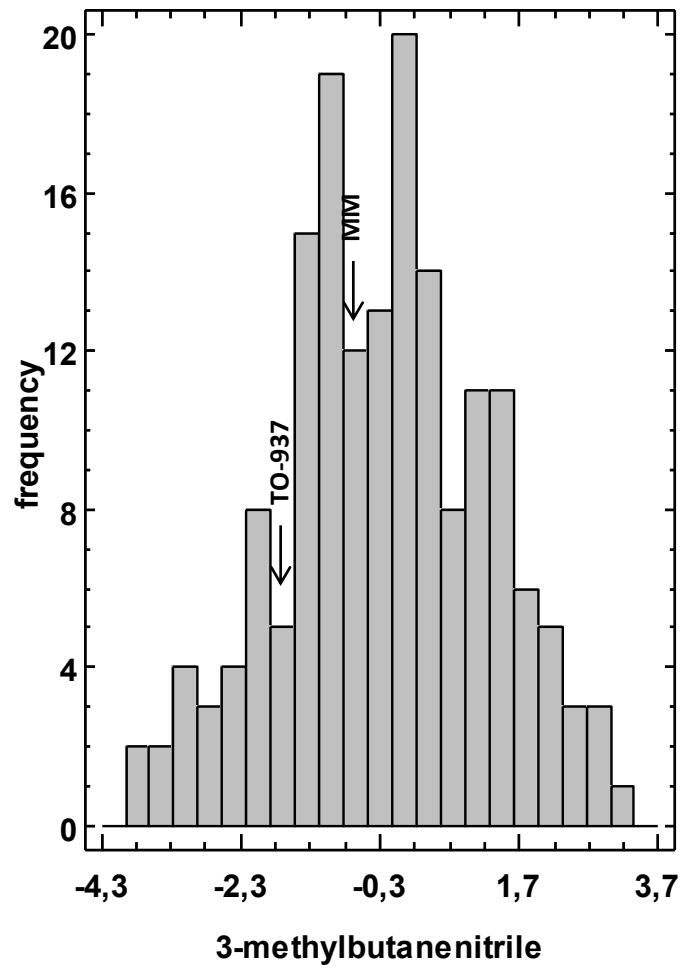
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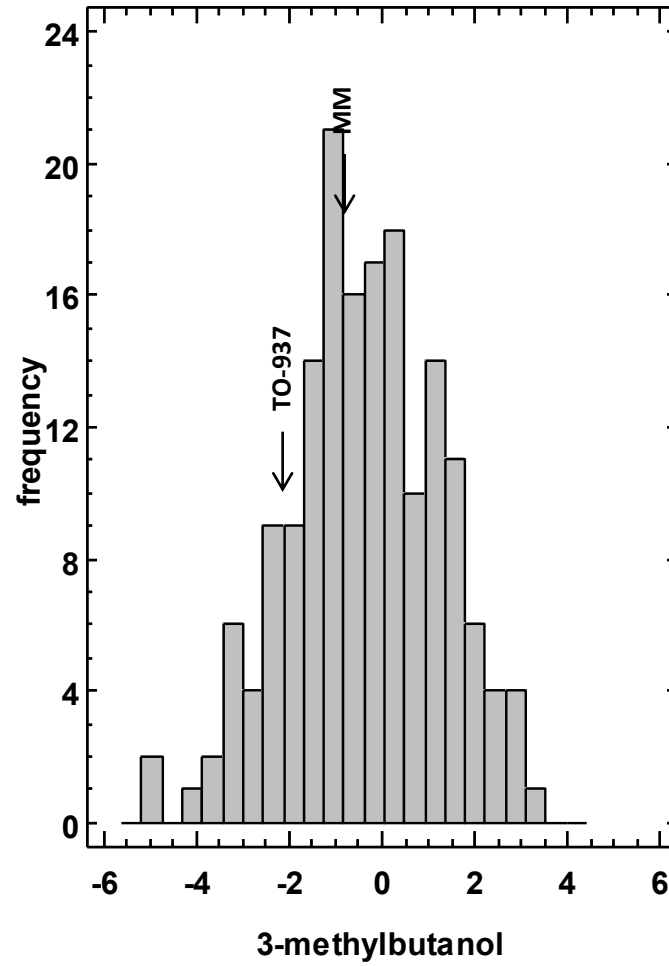
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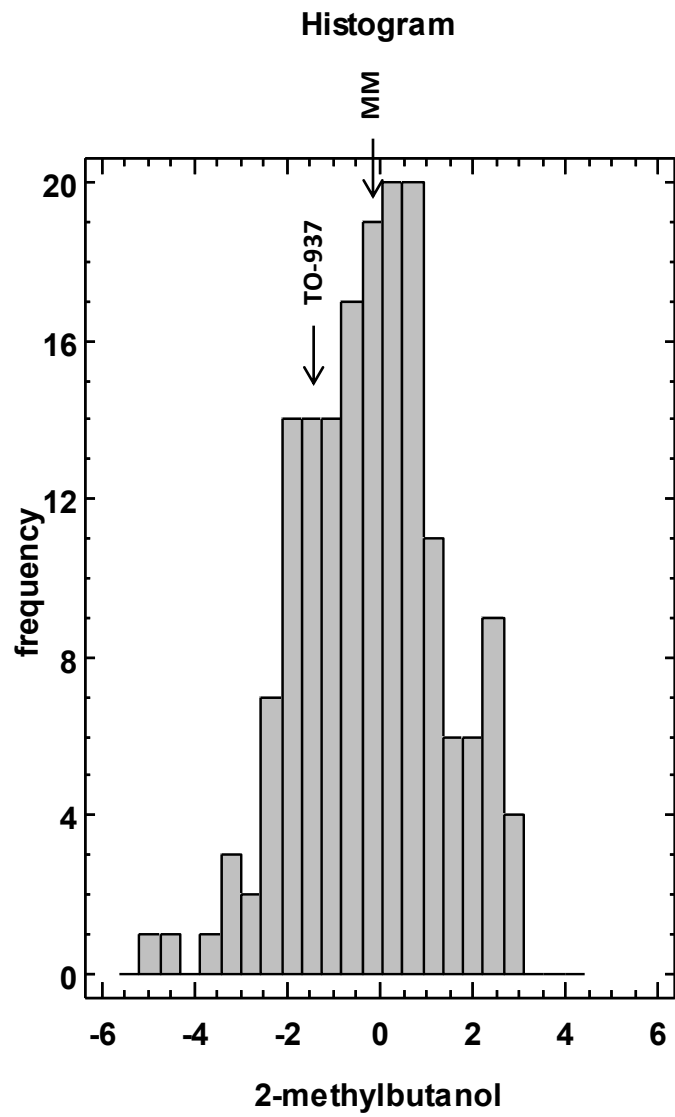


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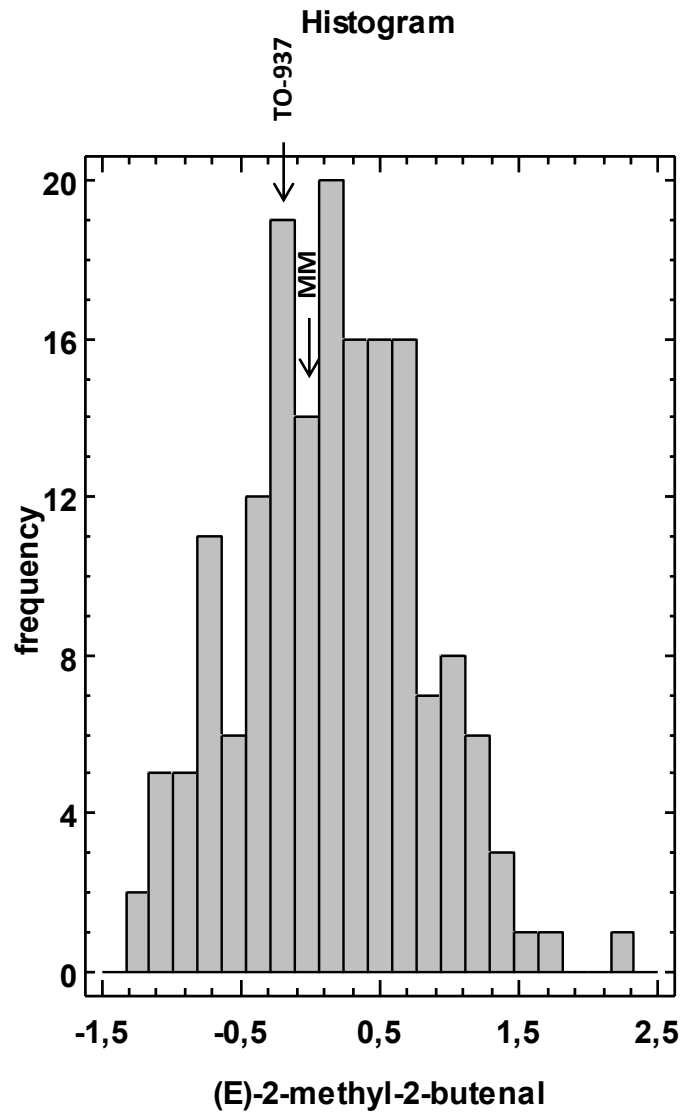
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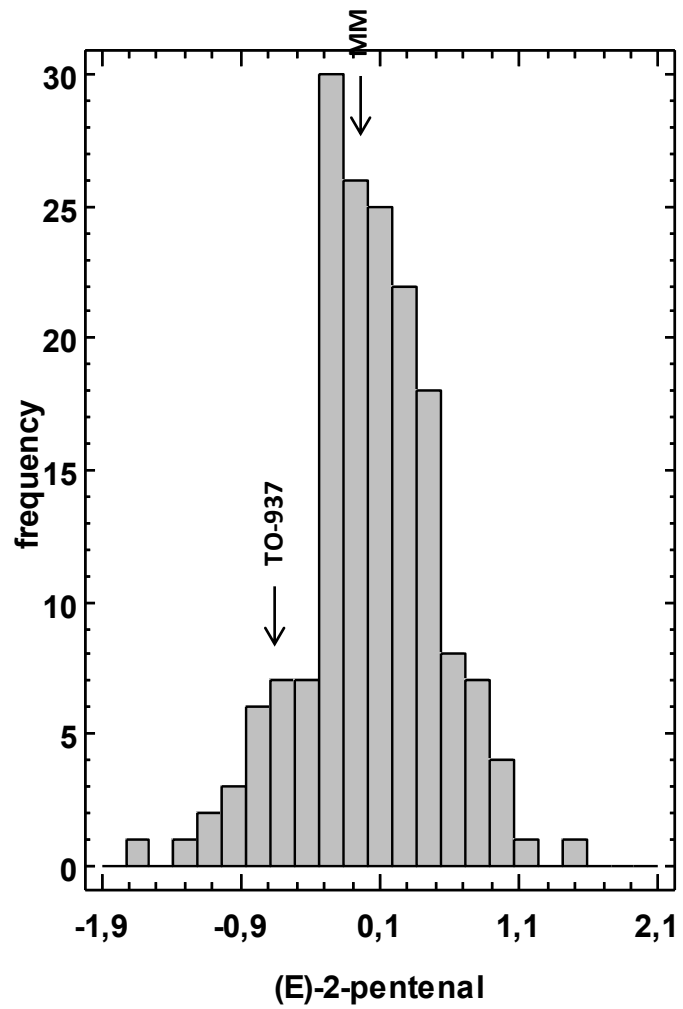


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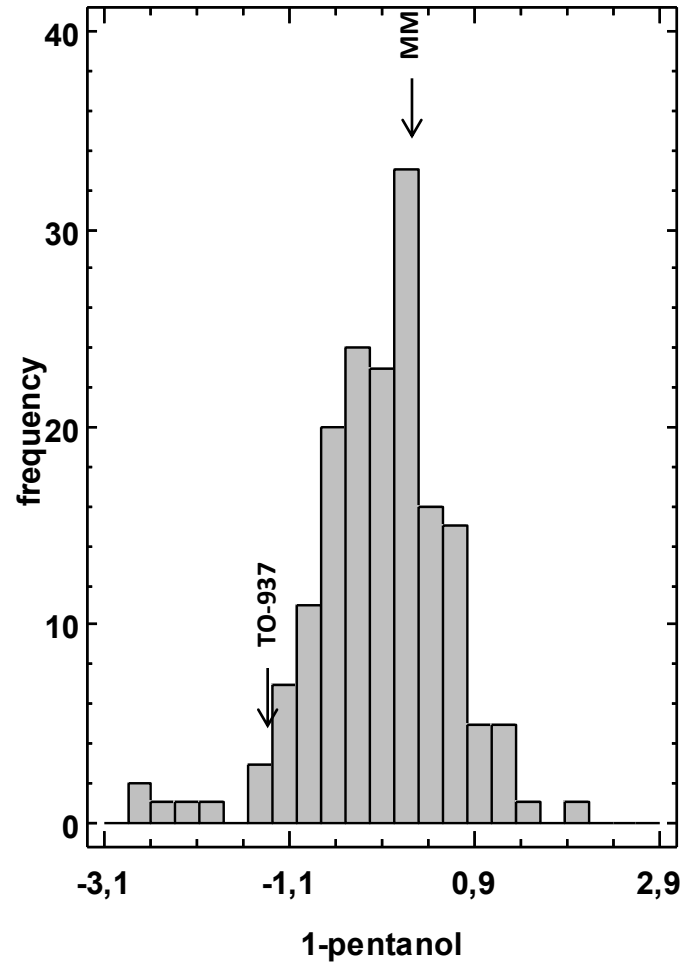
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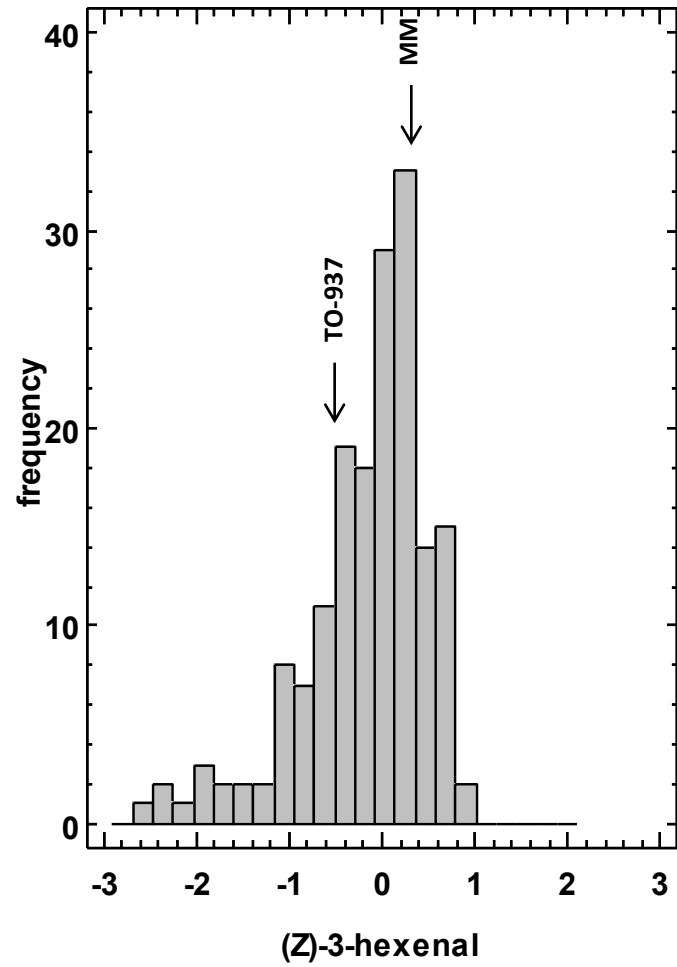
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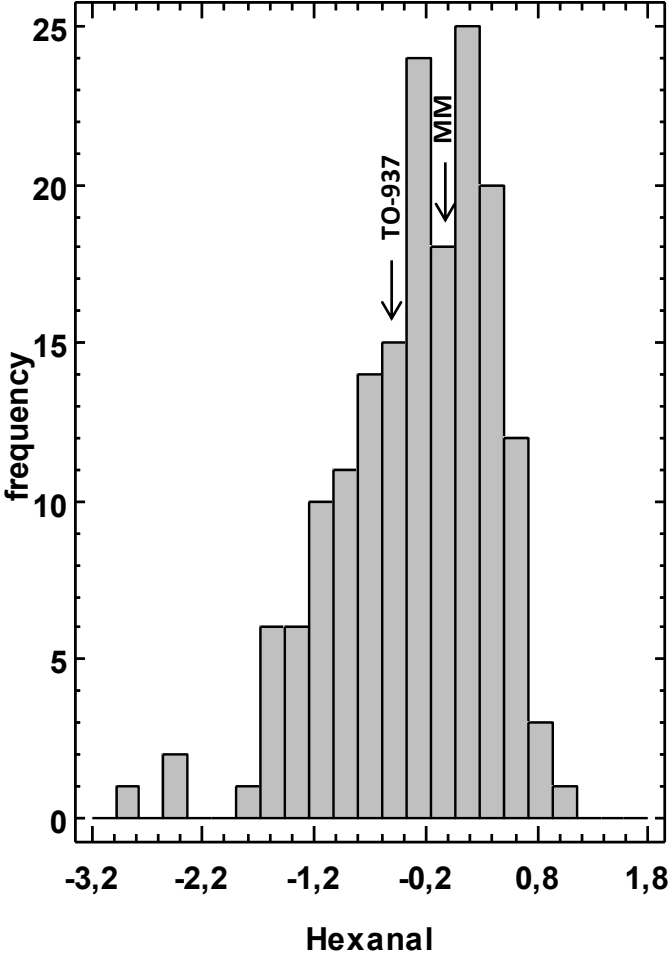
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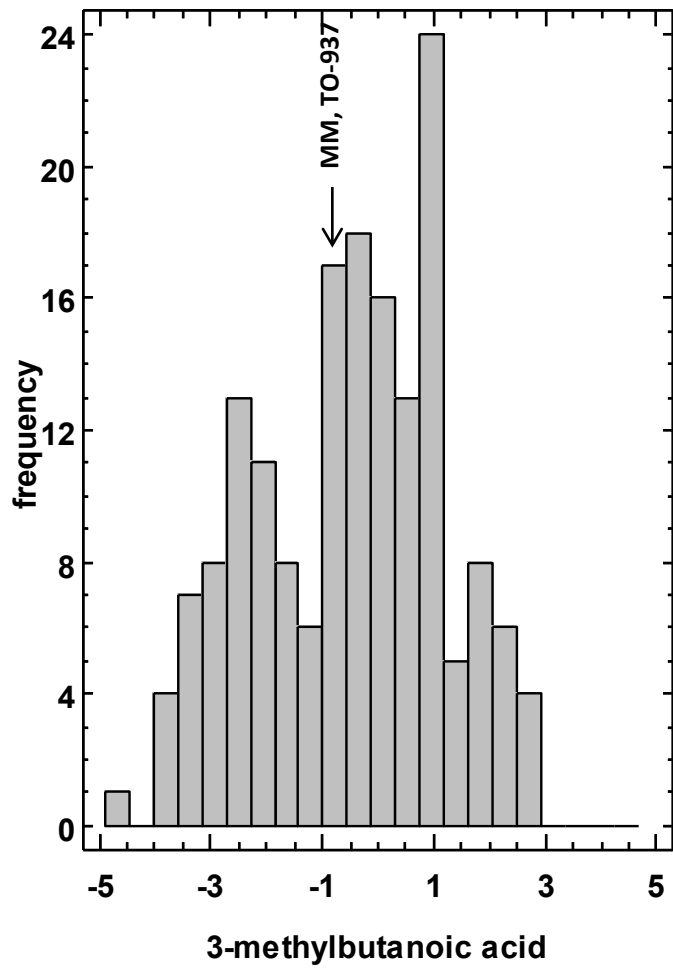
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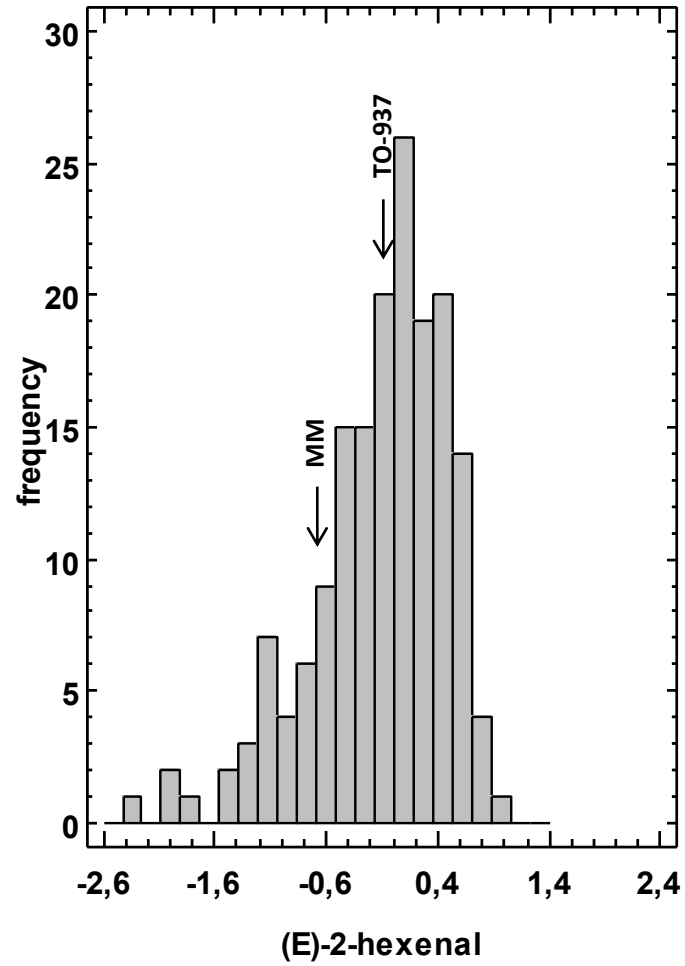
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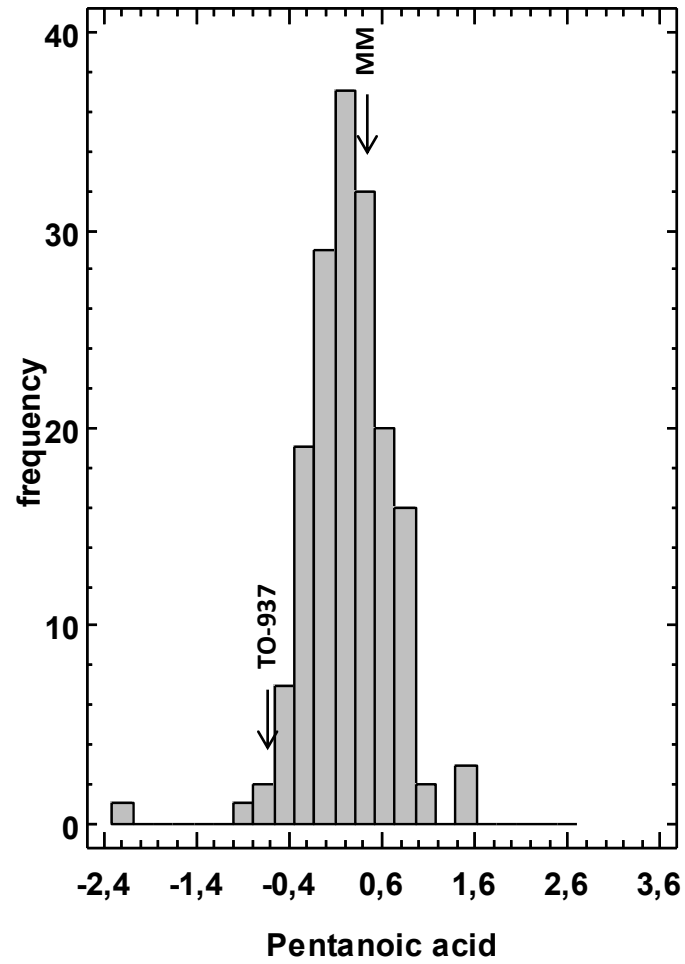
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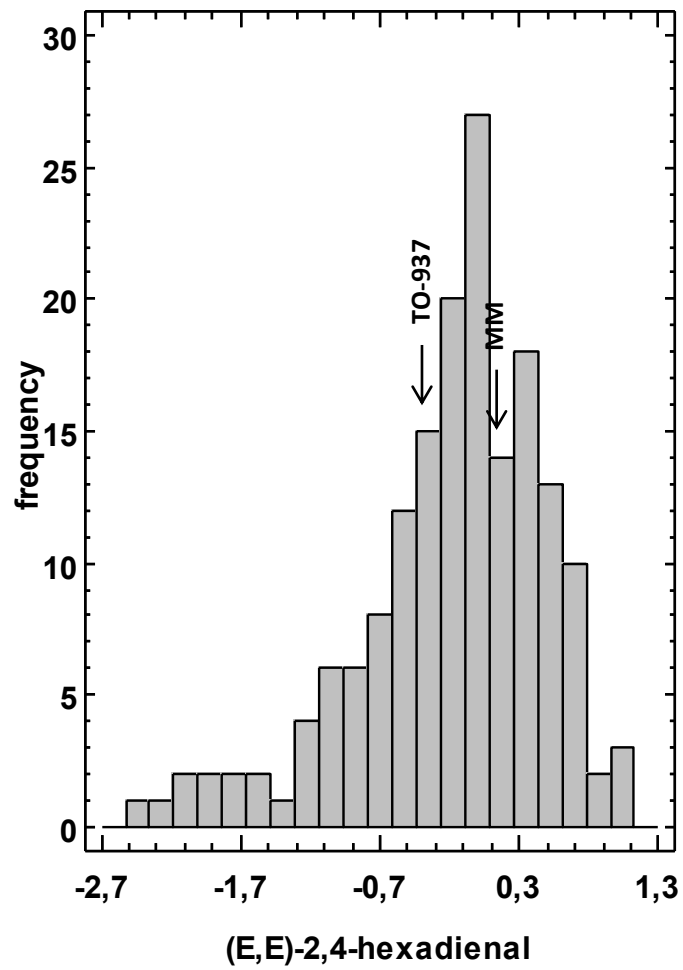
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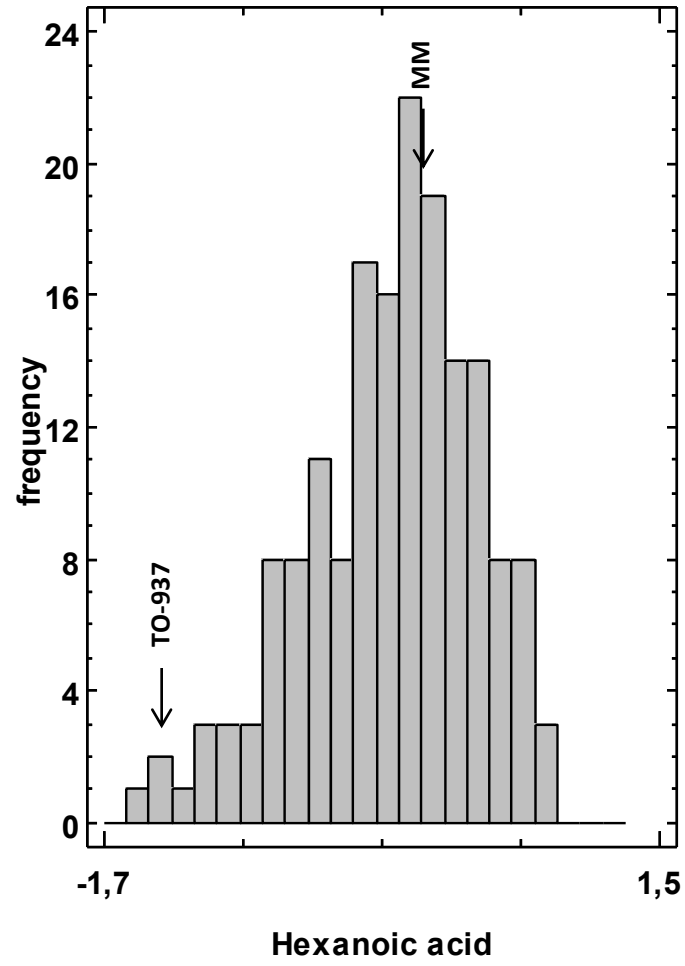
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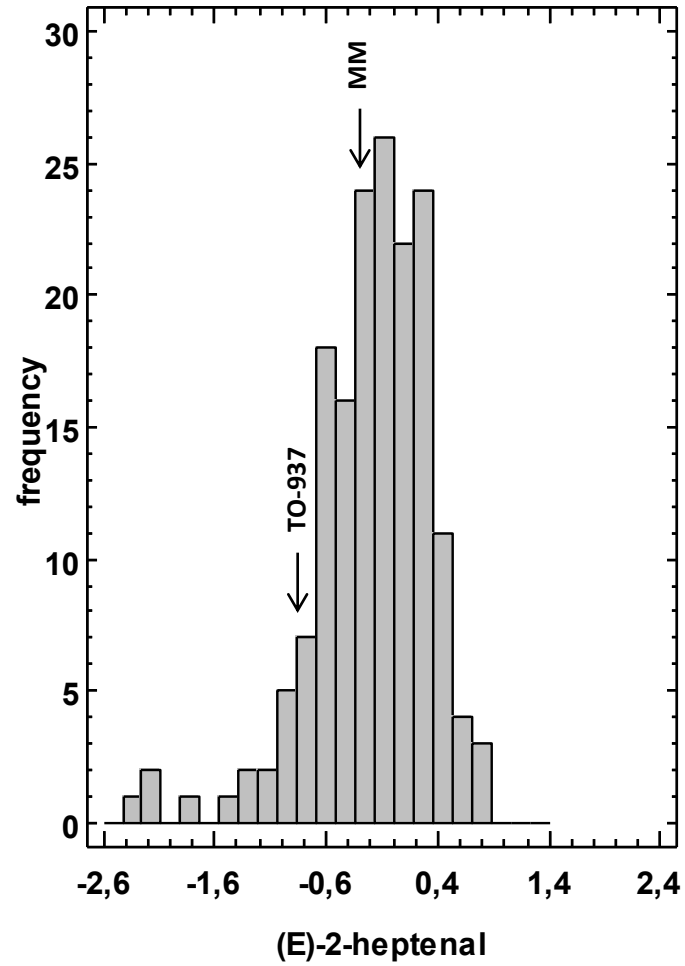
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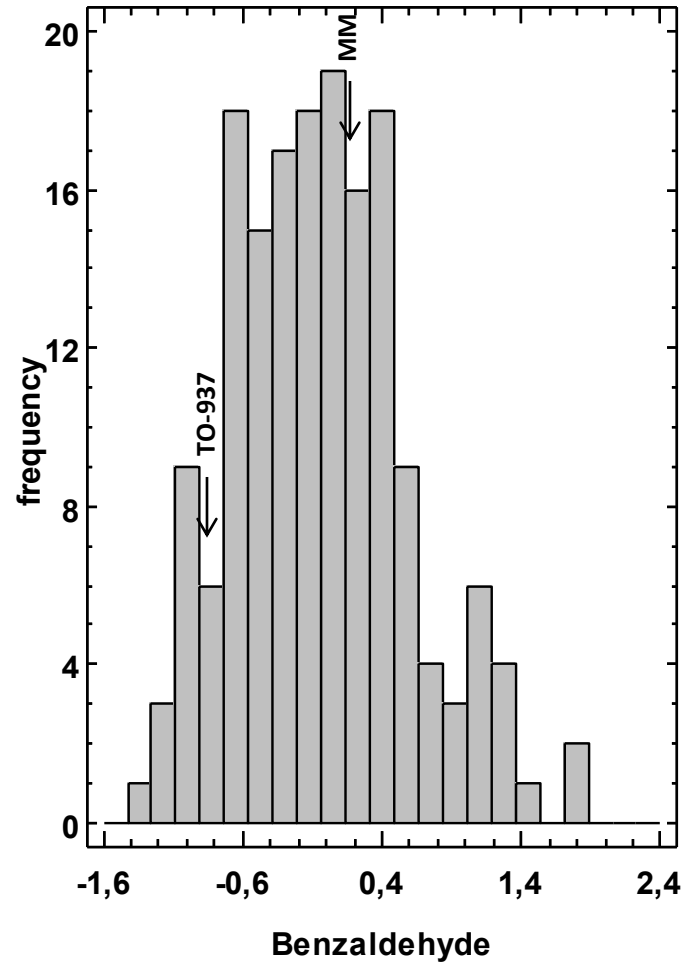
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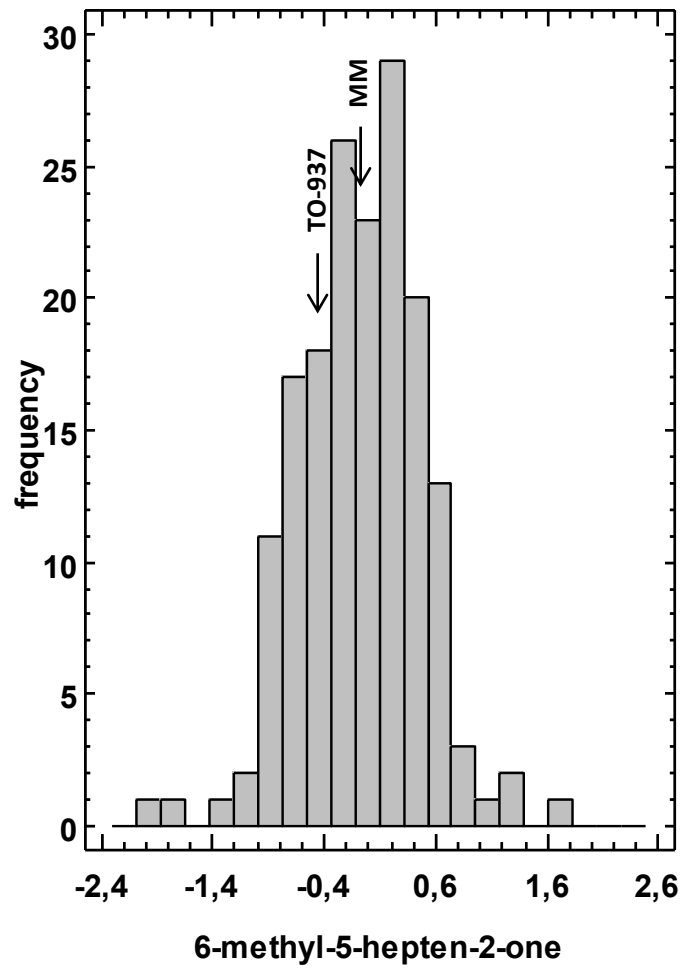
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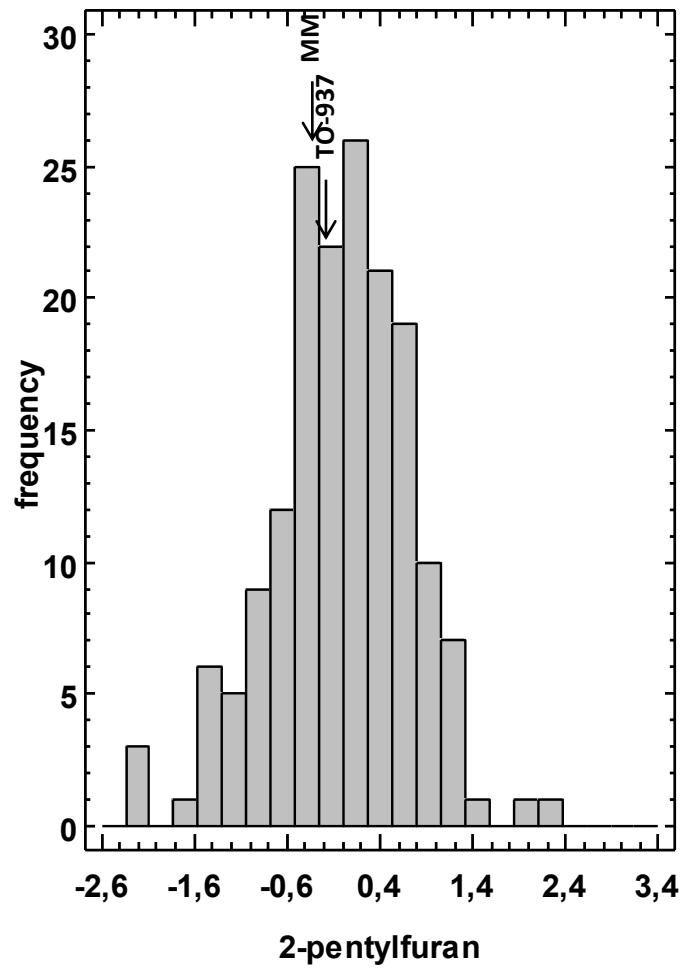
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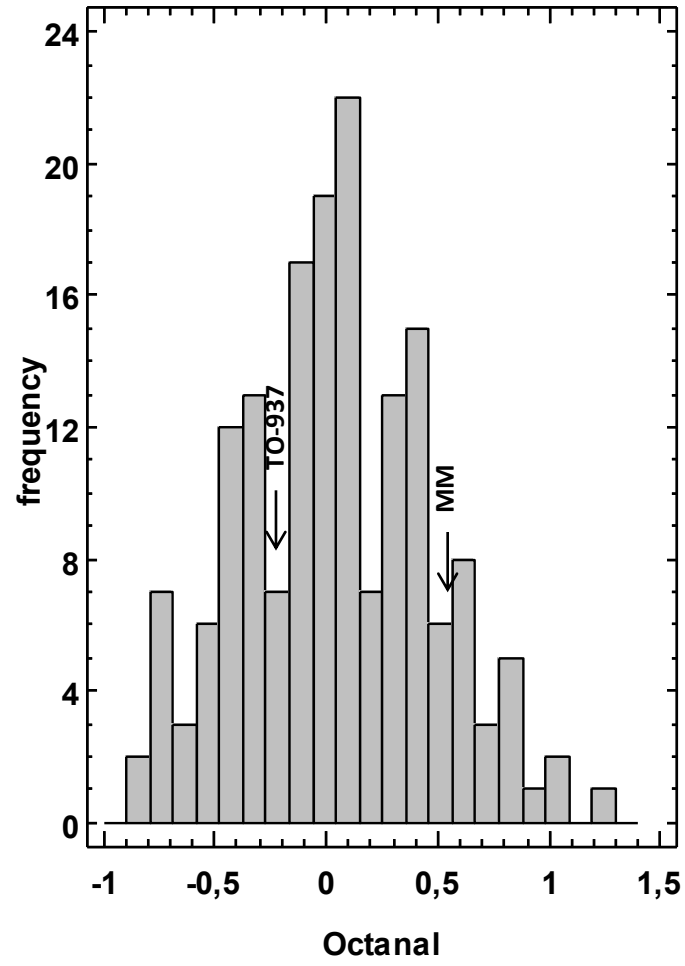
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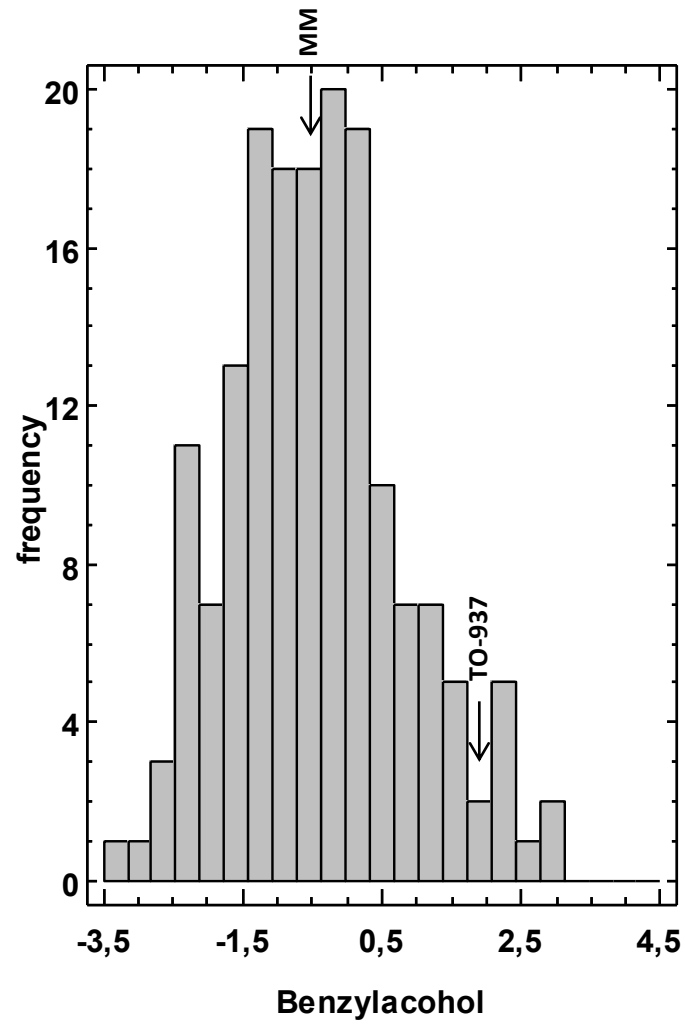
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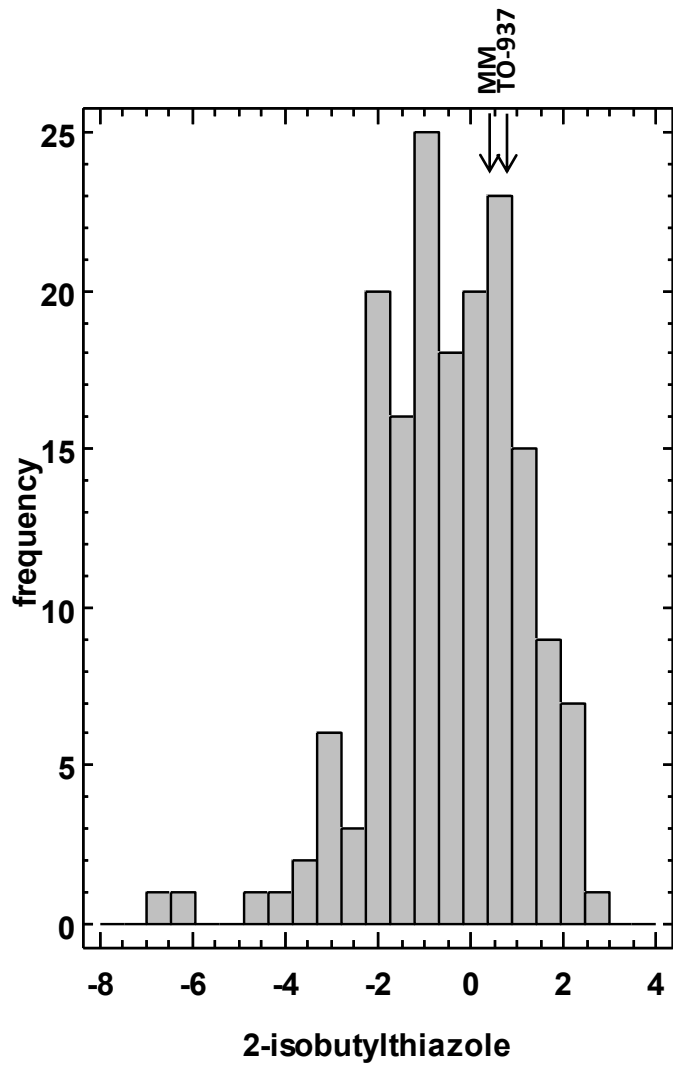
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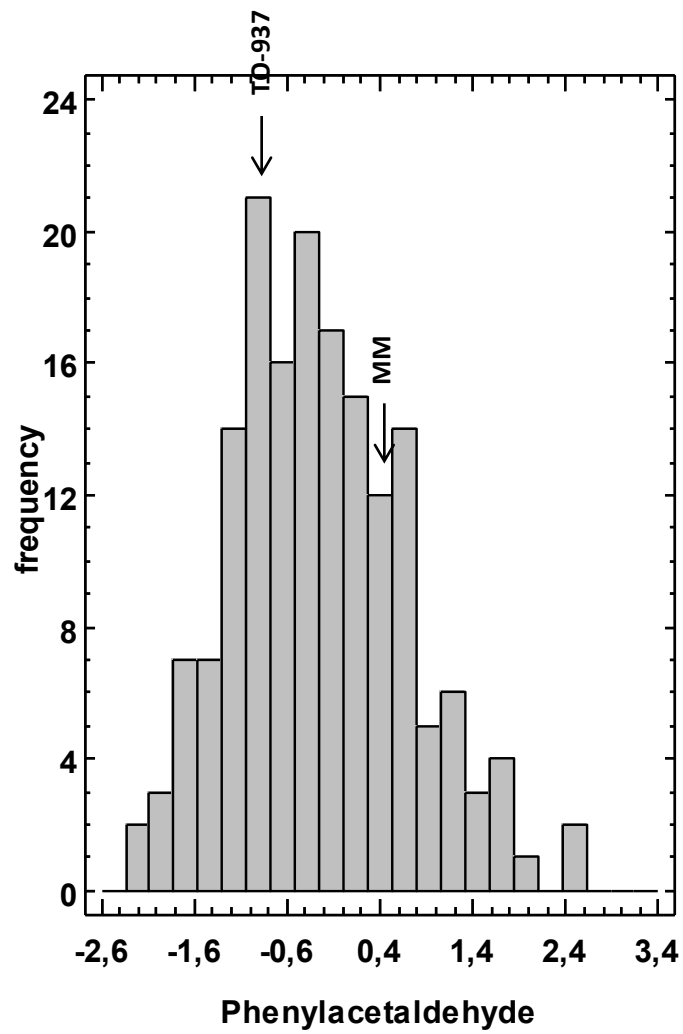
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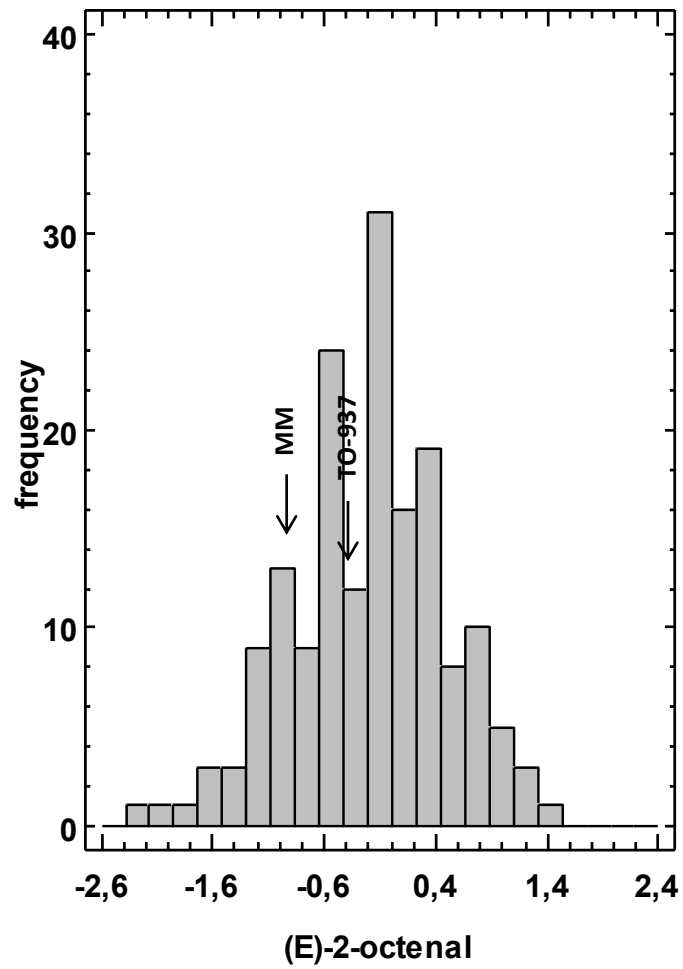
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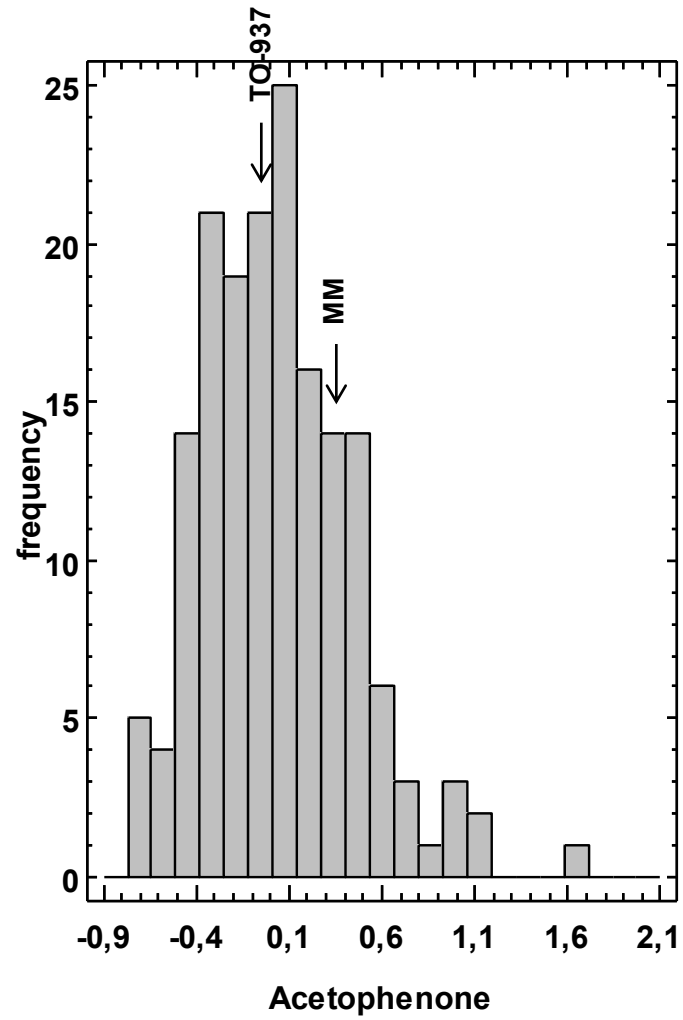
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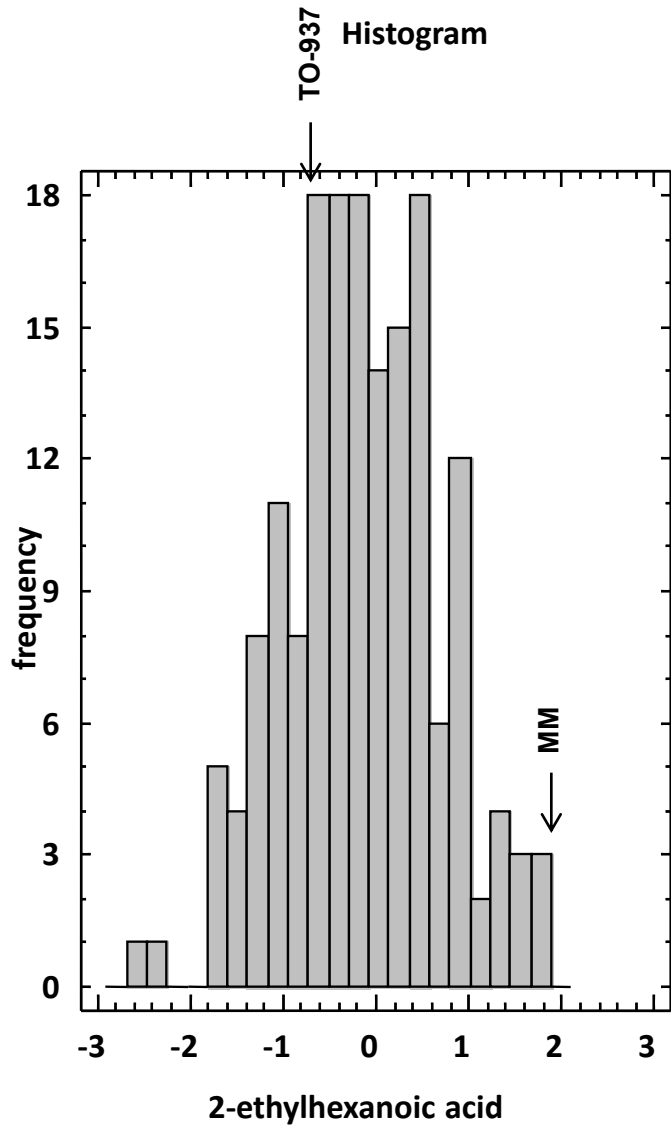


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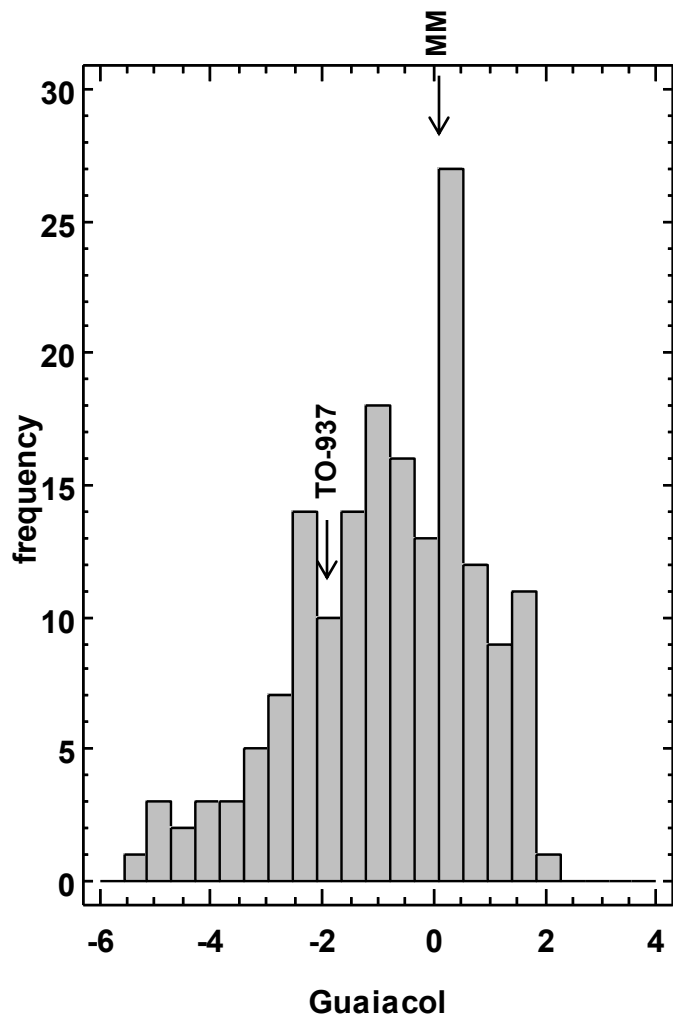


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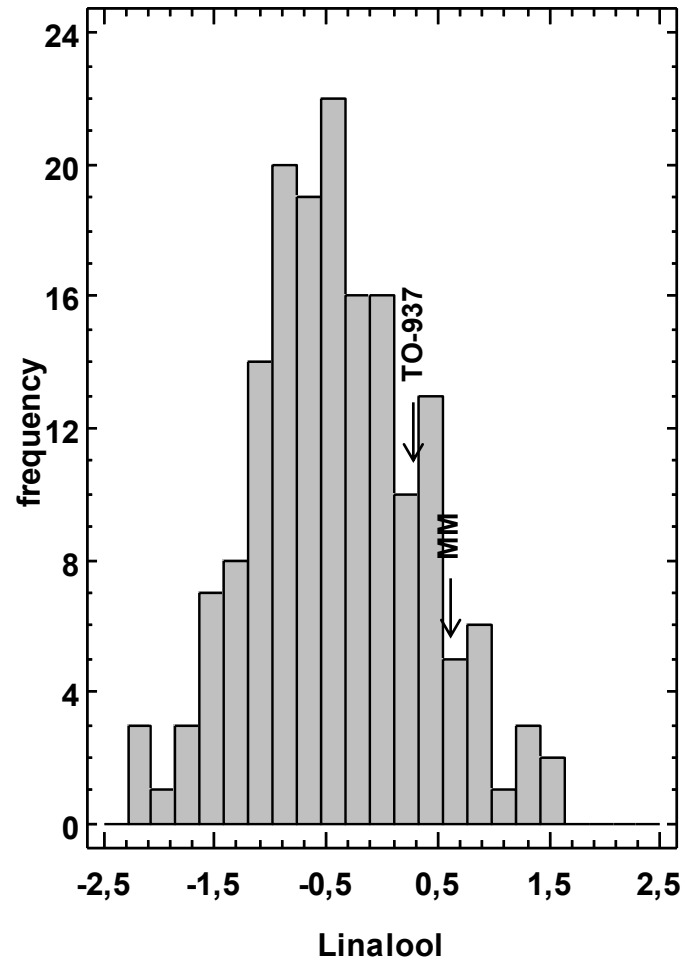
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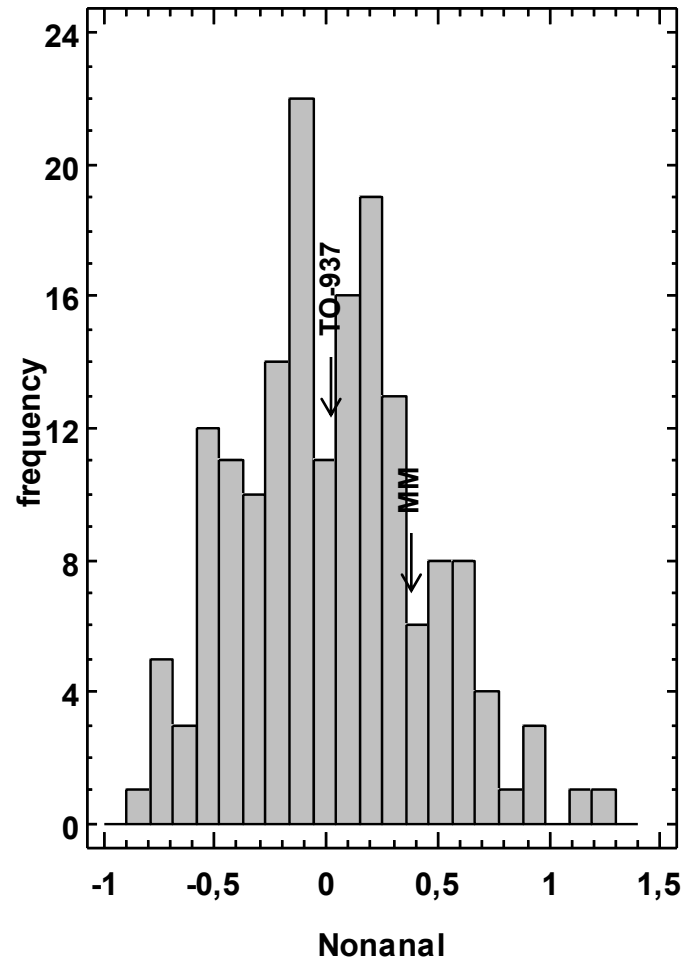
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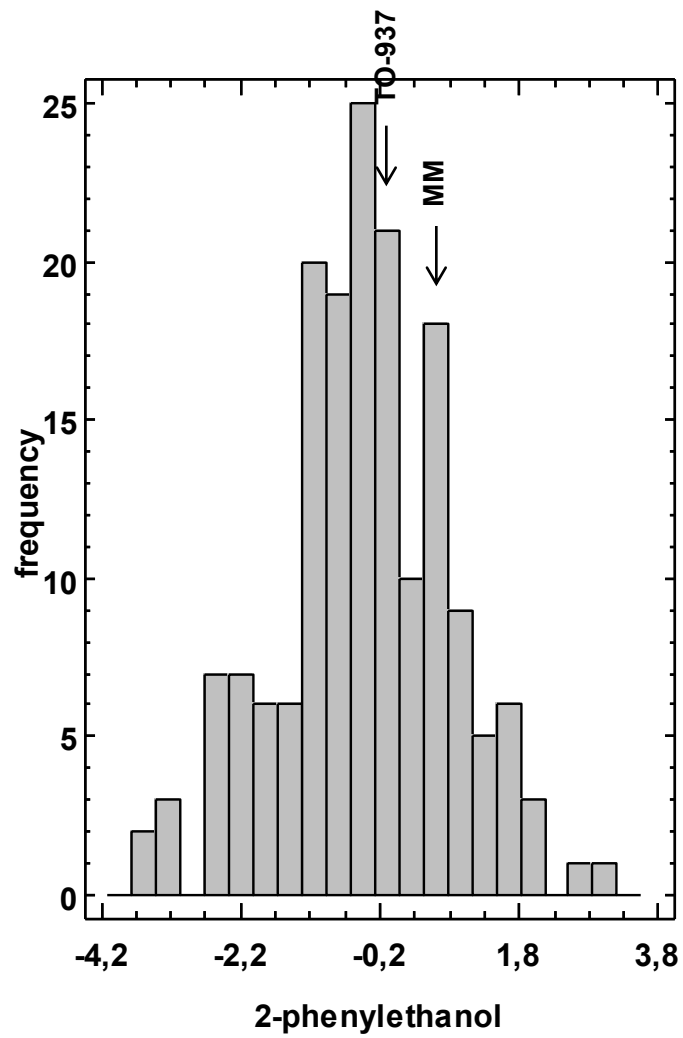
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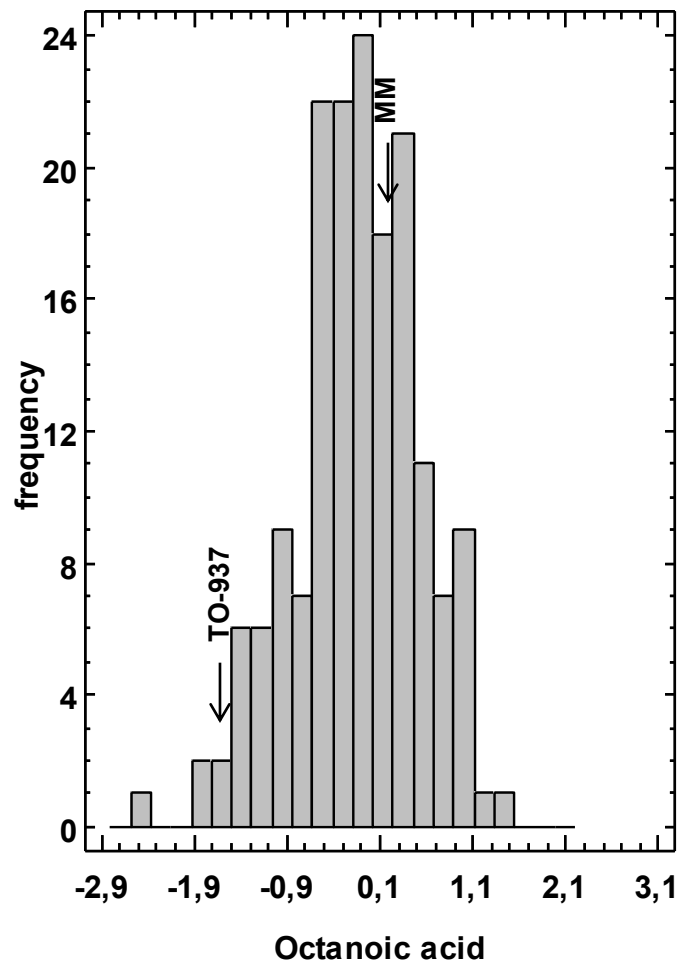
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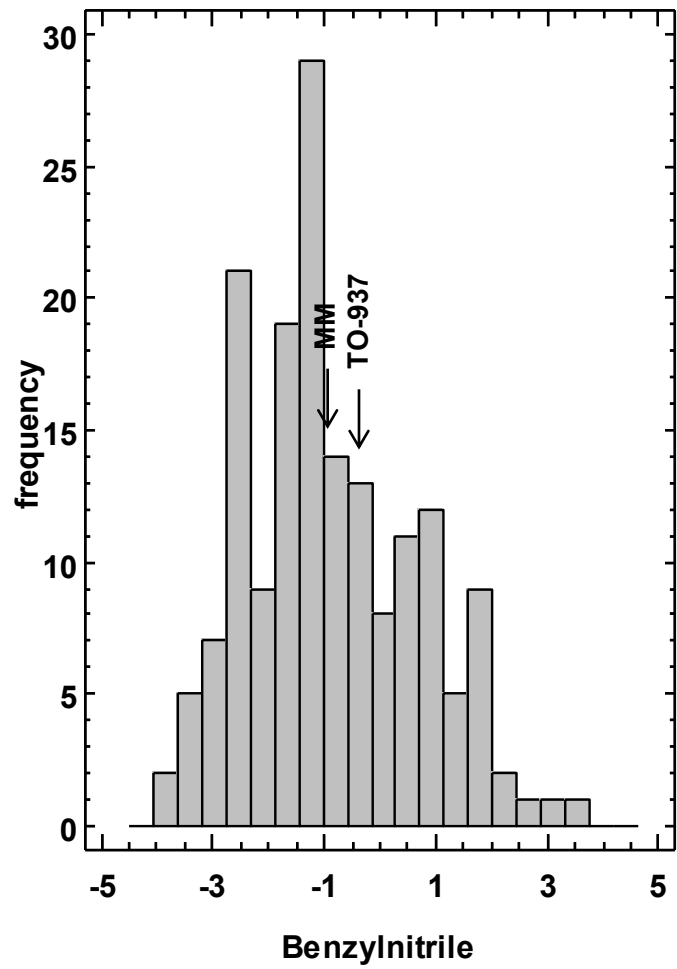
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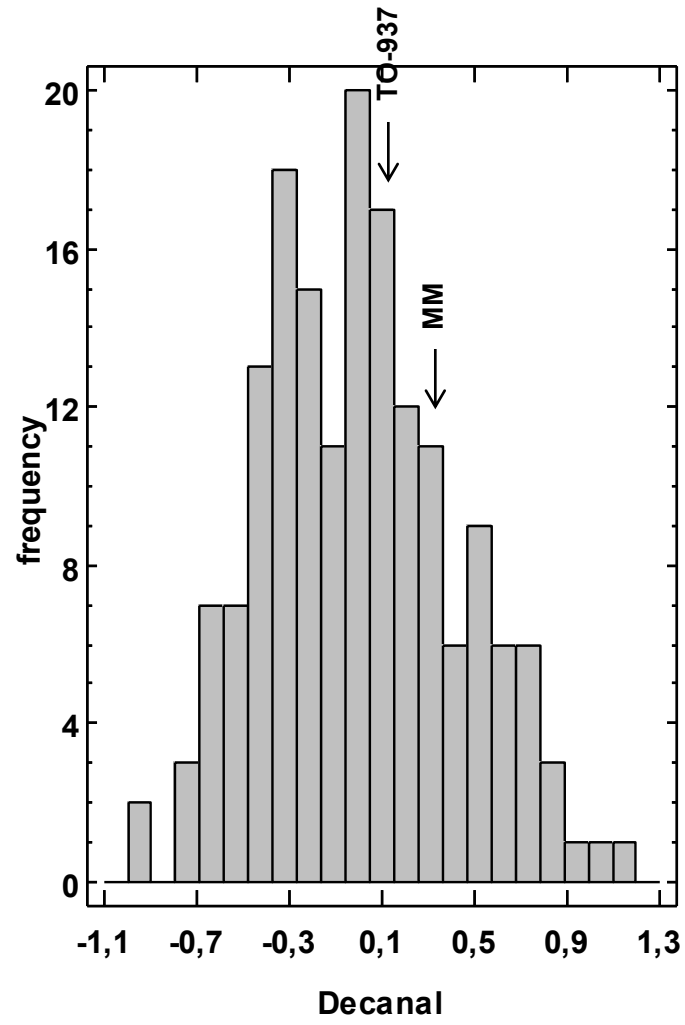
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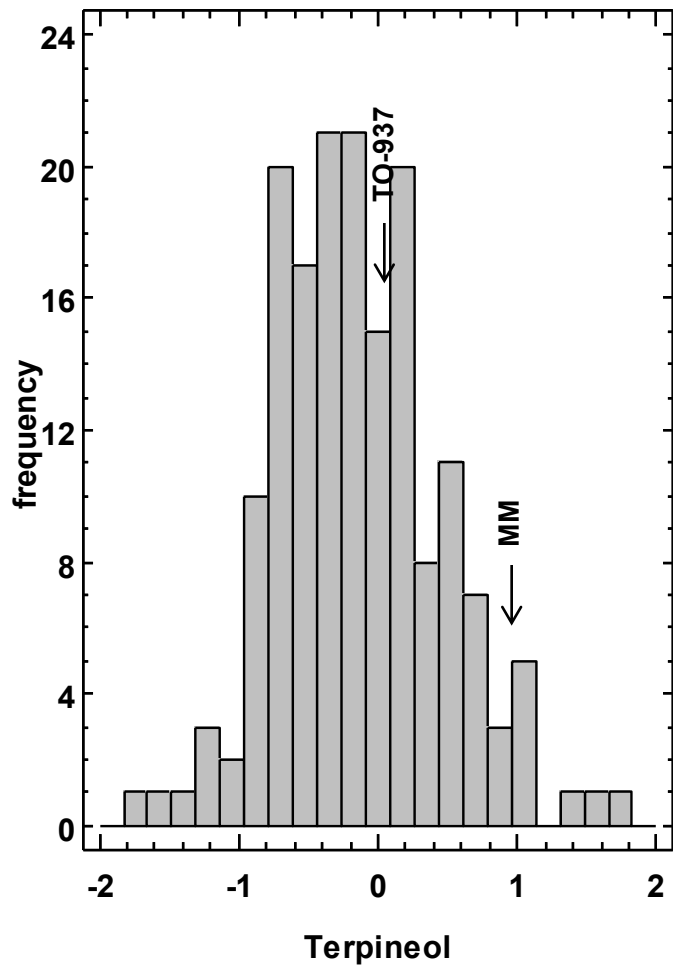
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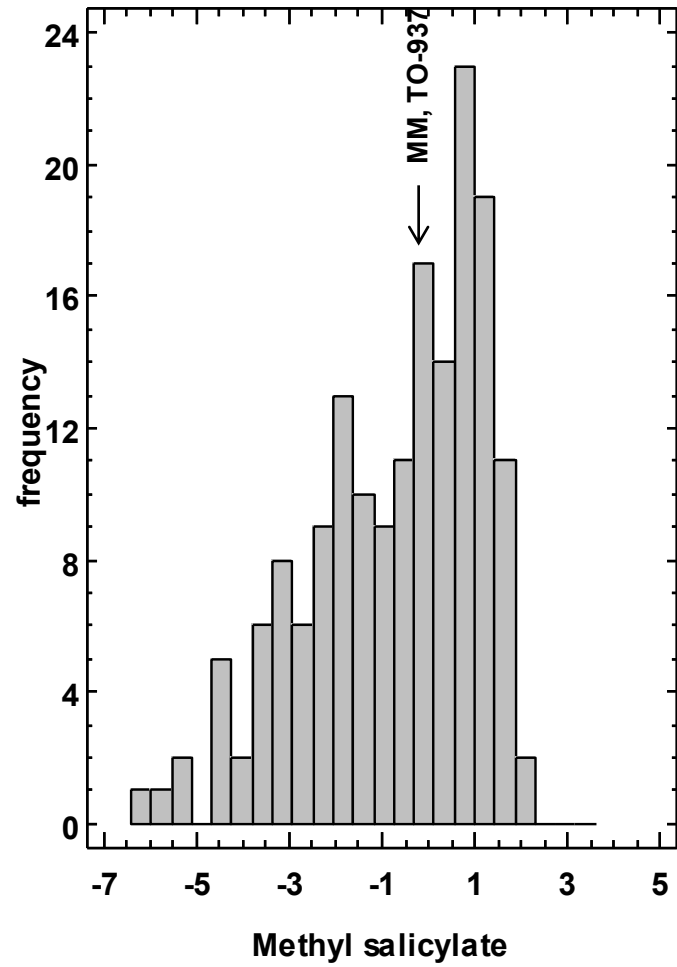
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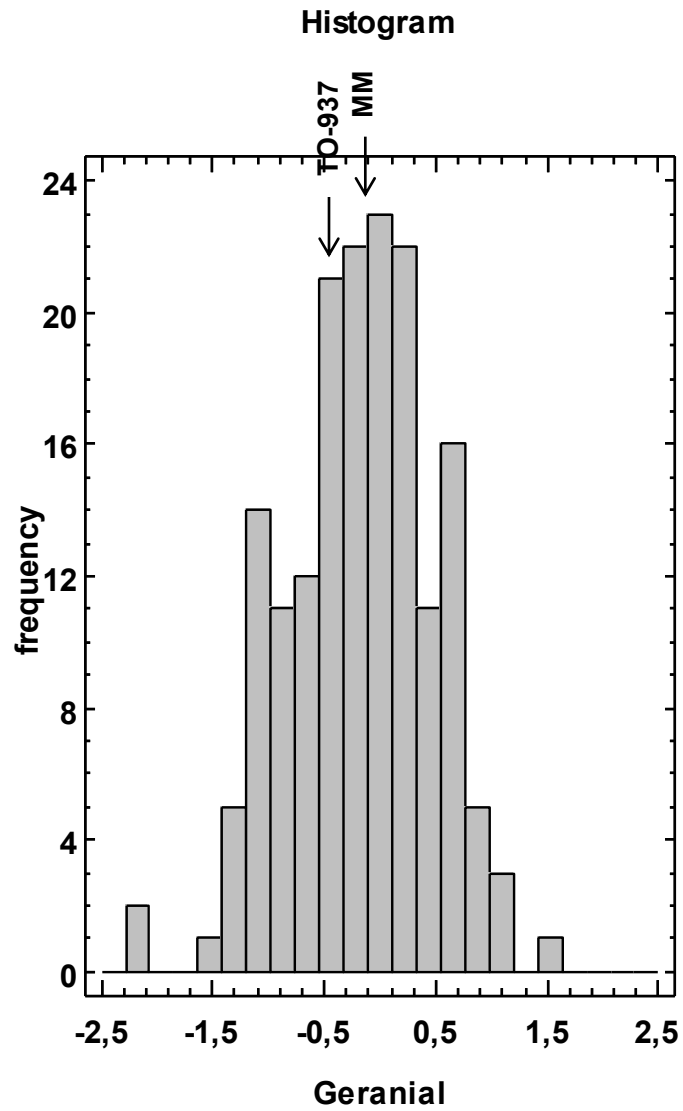


RILs season 2

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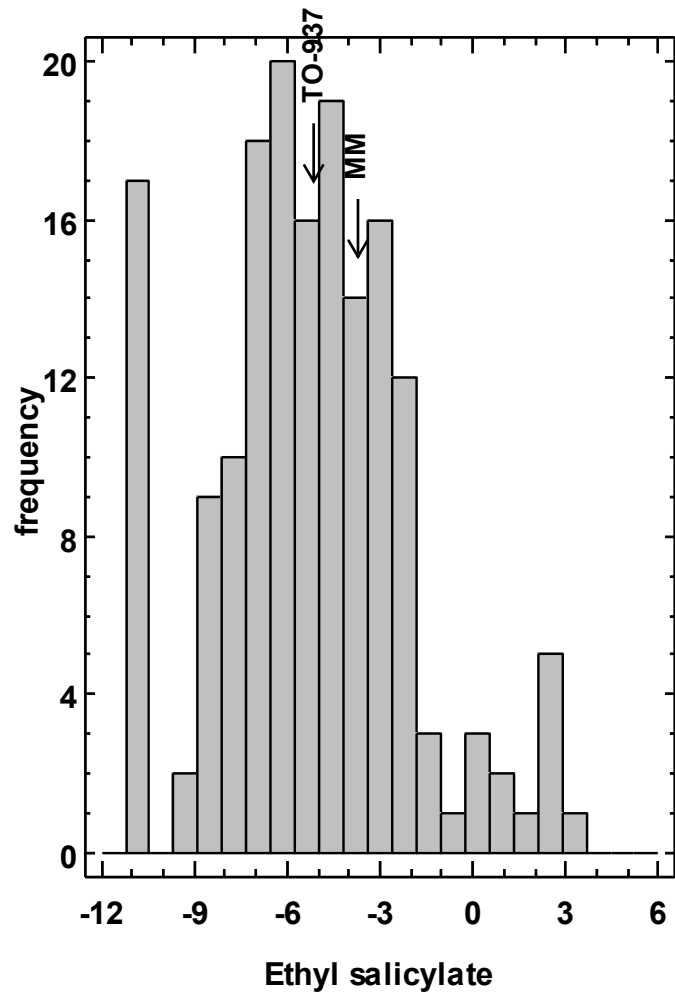


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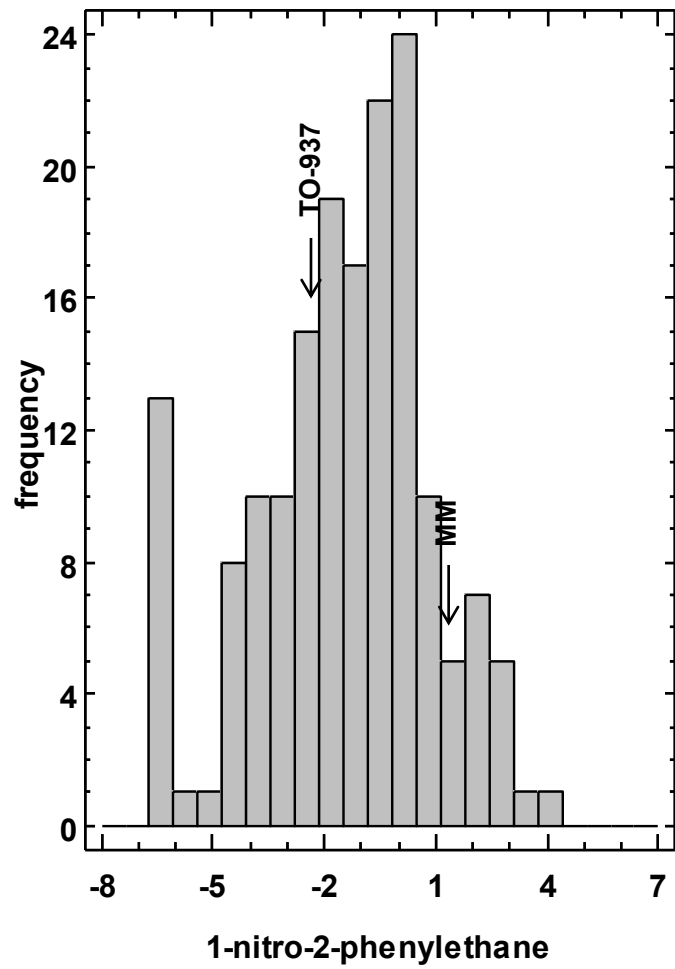
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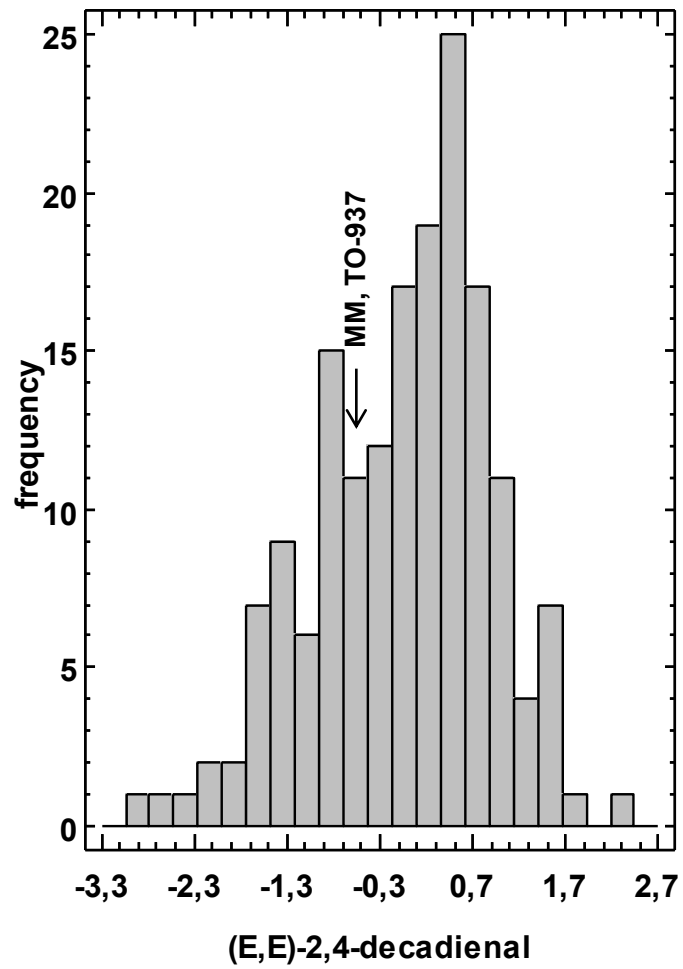
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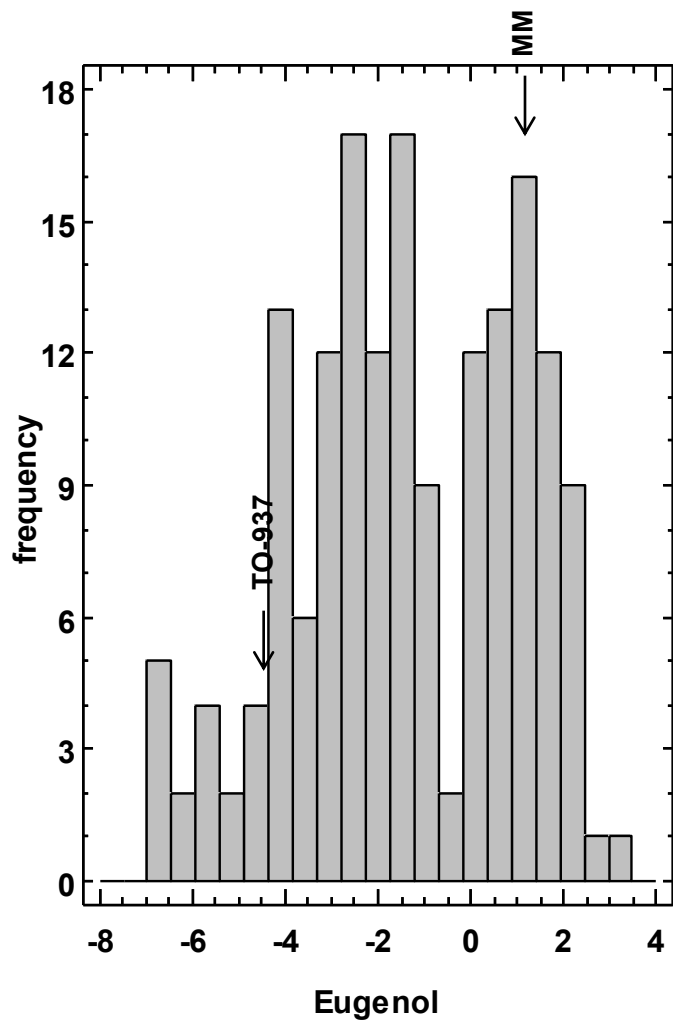
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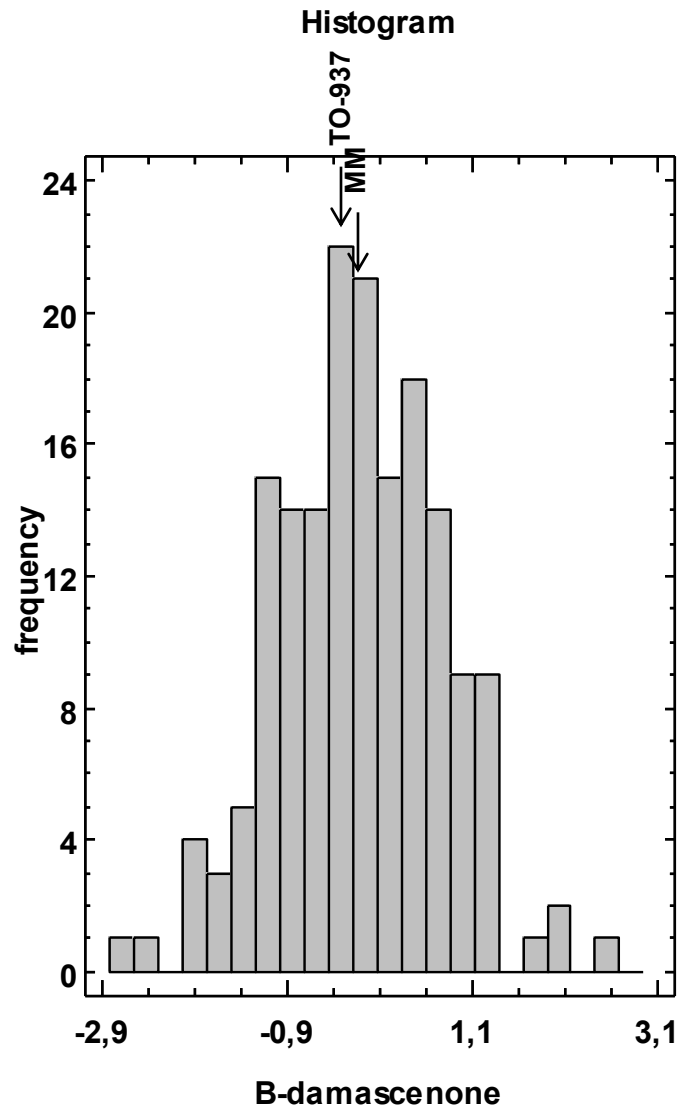


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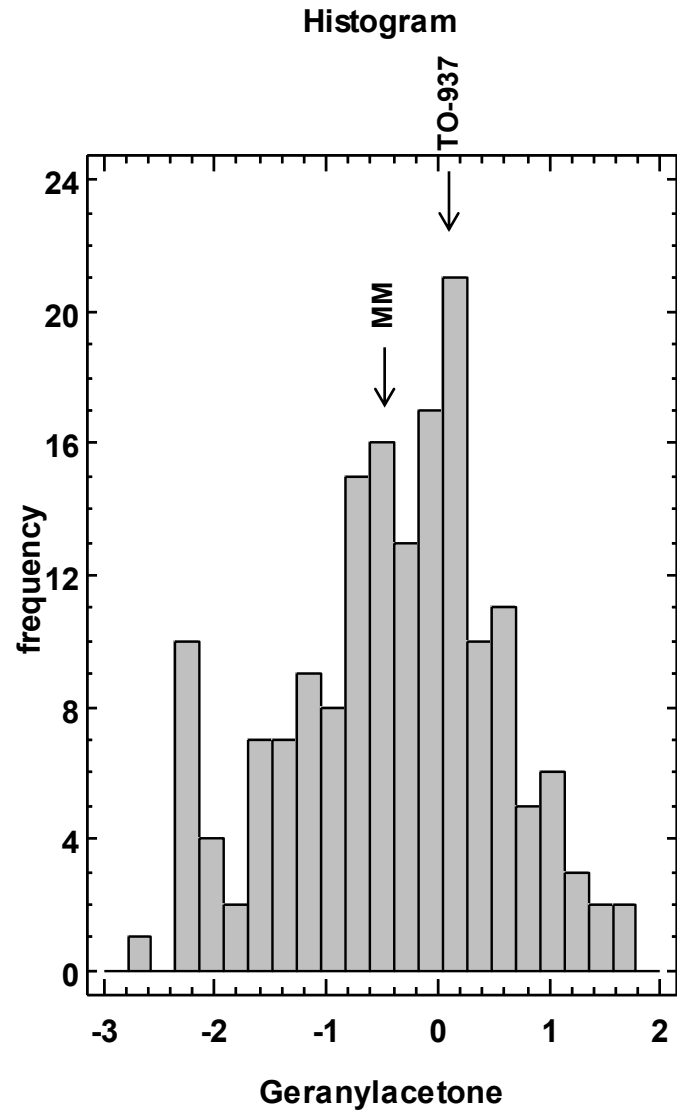
Histogram



RILs season 2

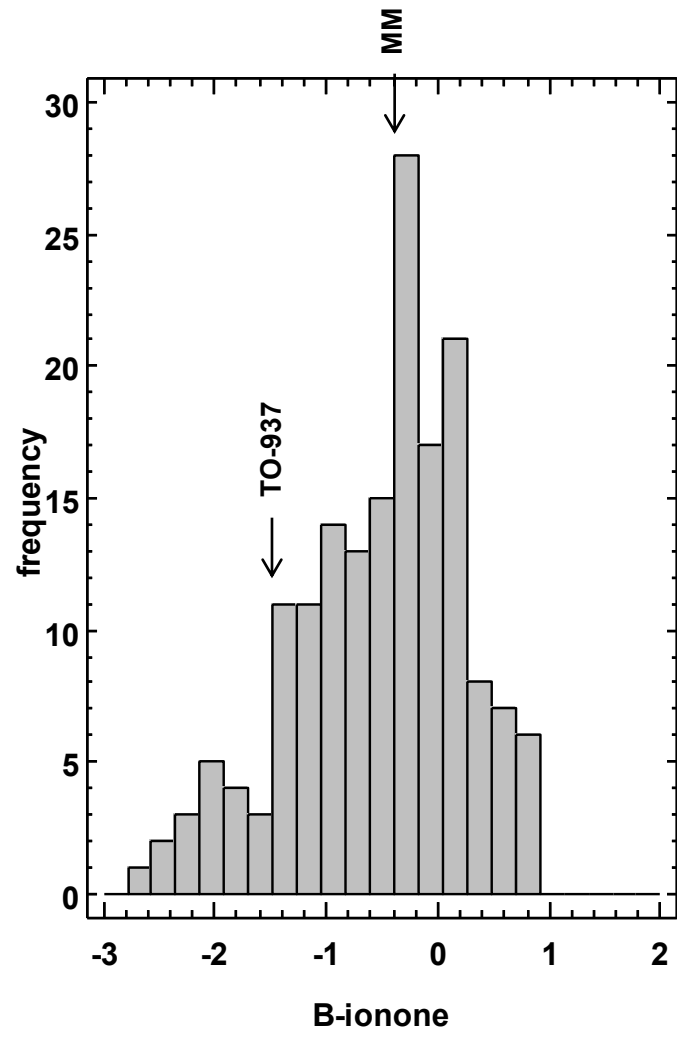


RILs season 2



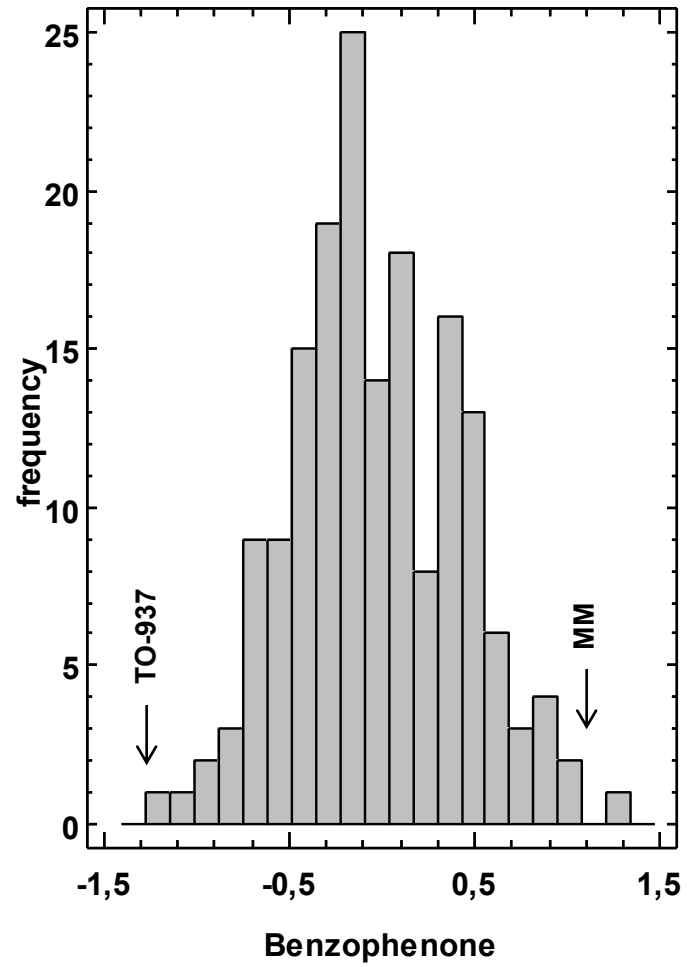
RILs season 2

Histogram



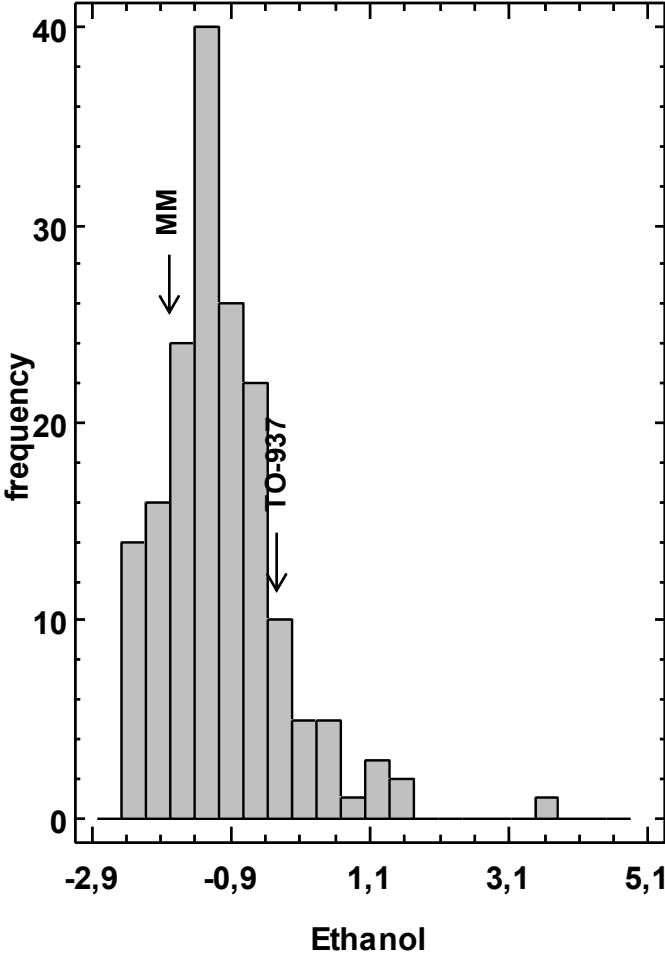
RILs season 2

Histogram



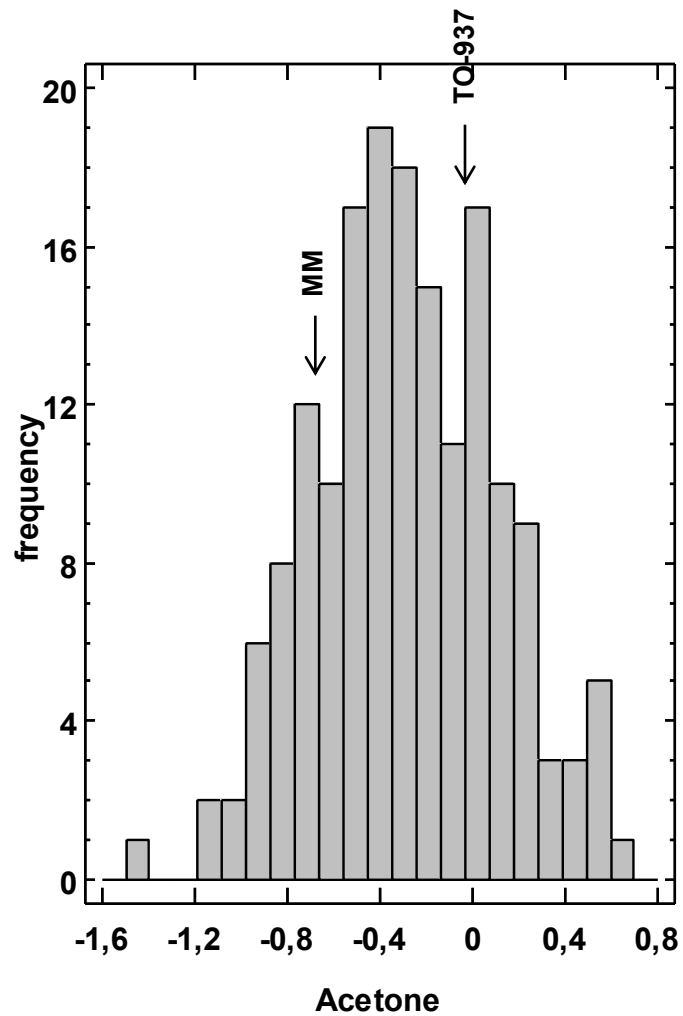
RILs season 3

Histogram



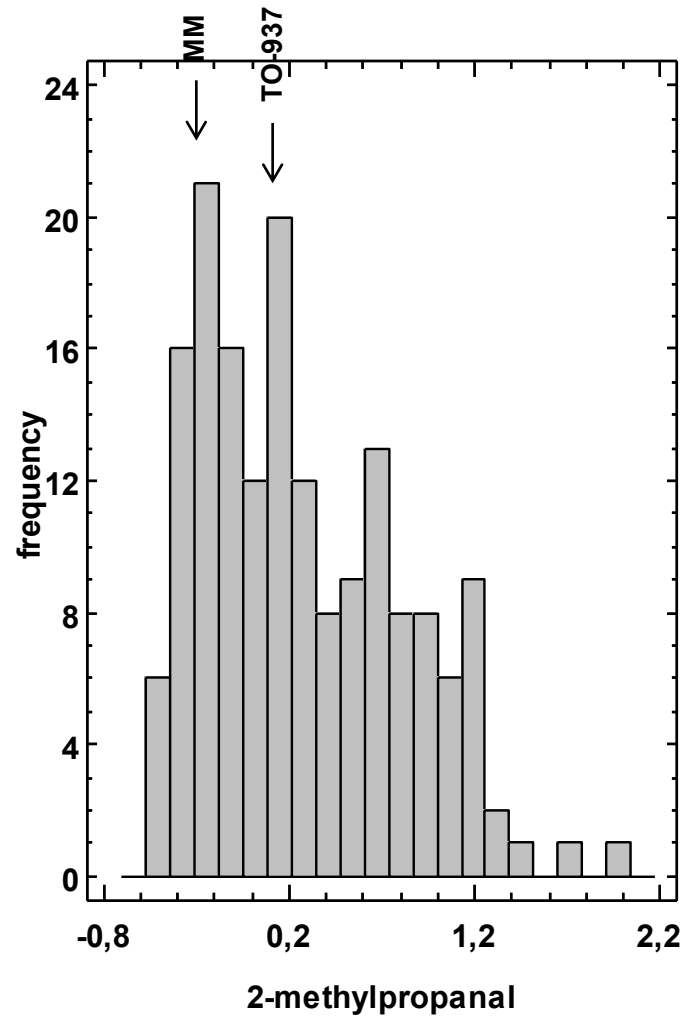
RILs season 3

Histogram



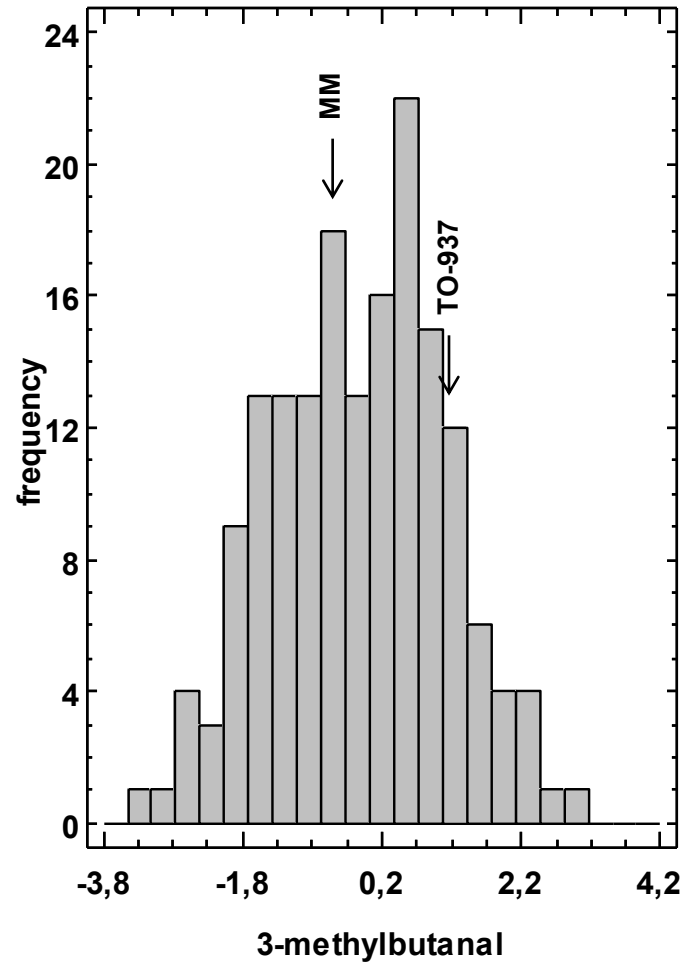
RILs season 3

Histogram



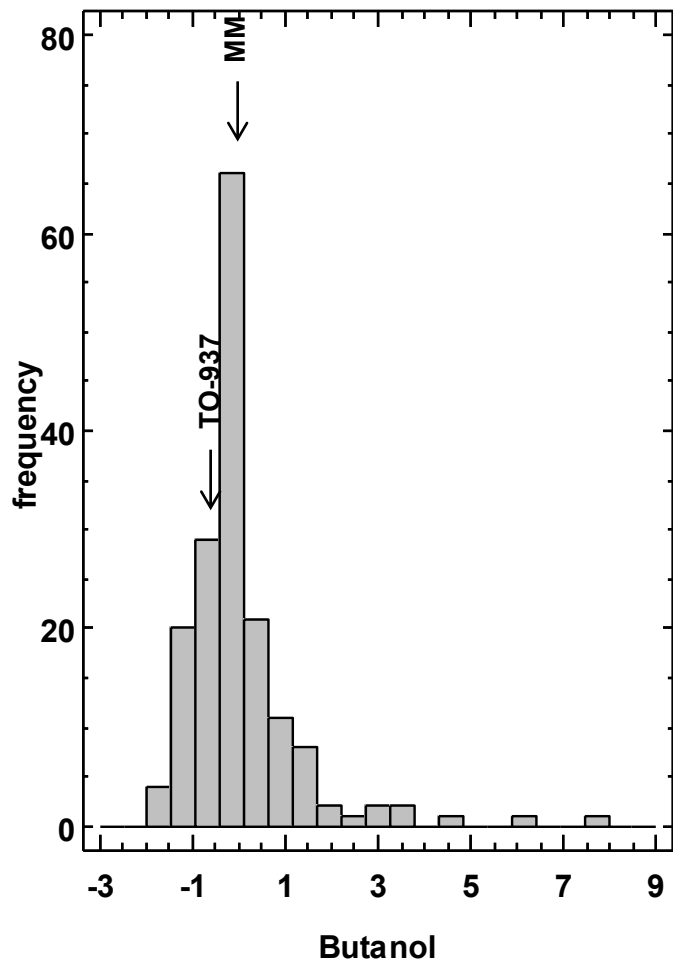
RILs season 3

Histogram

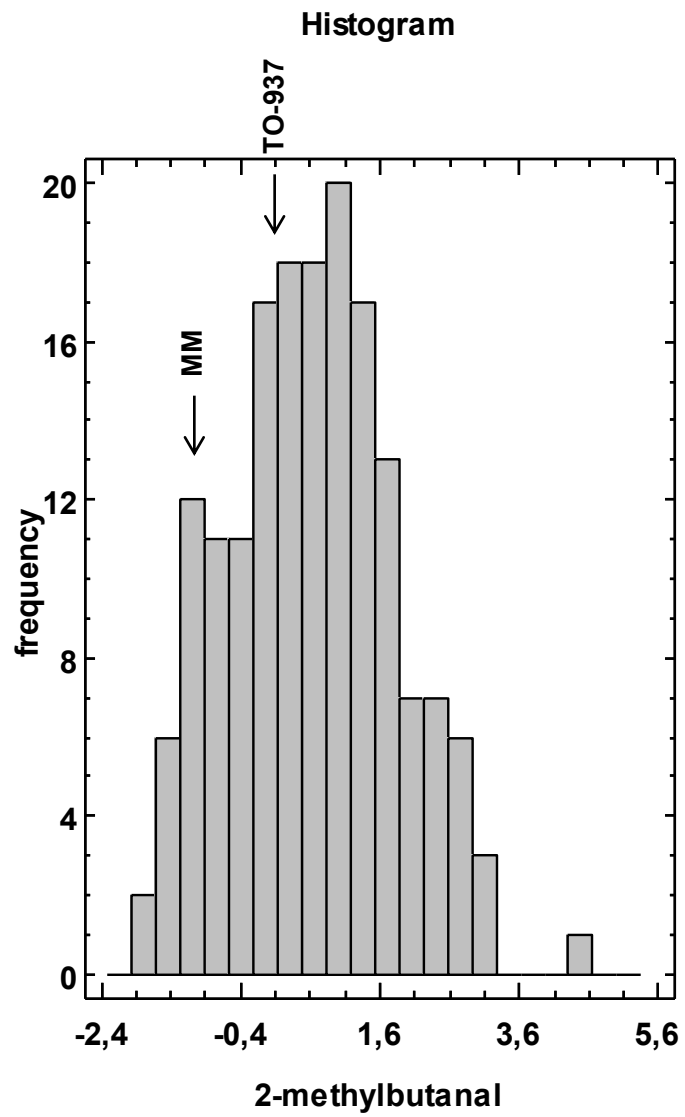


RILs season 3

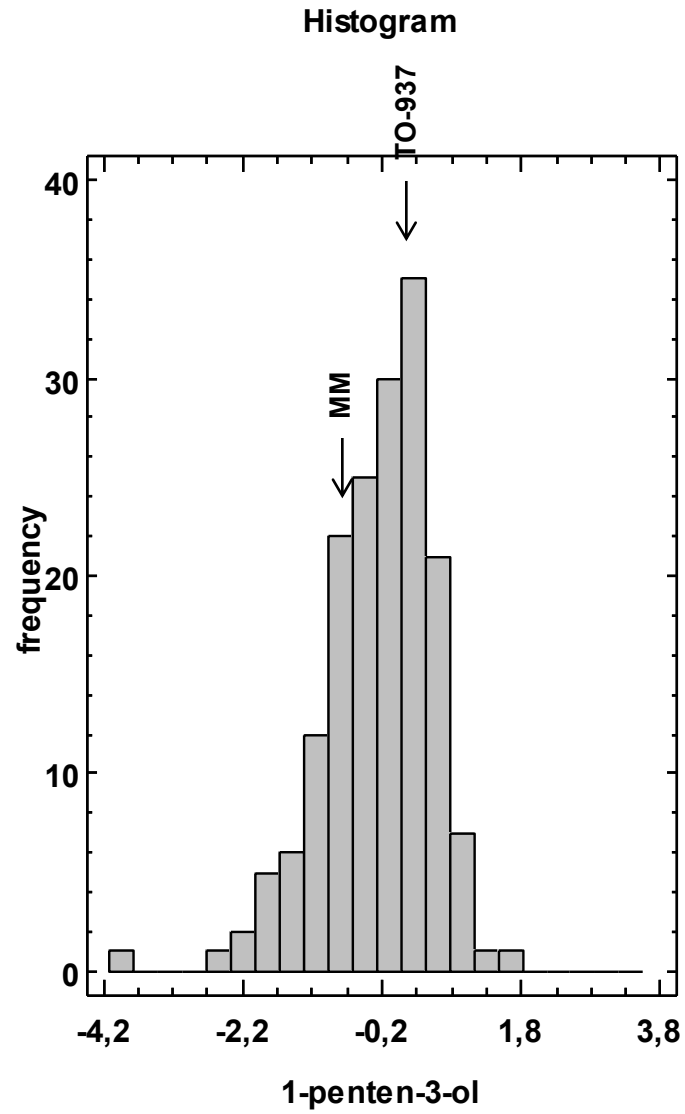
Histogram



RILs season 3

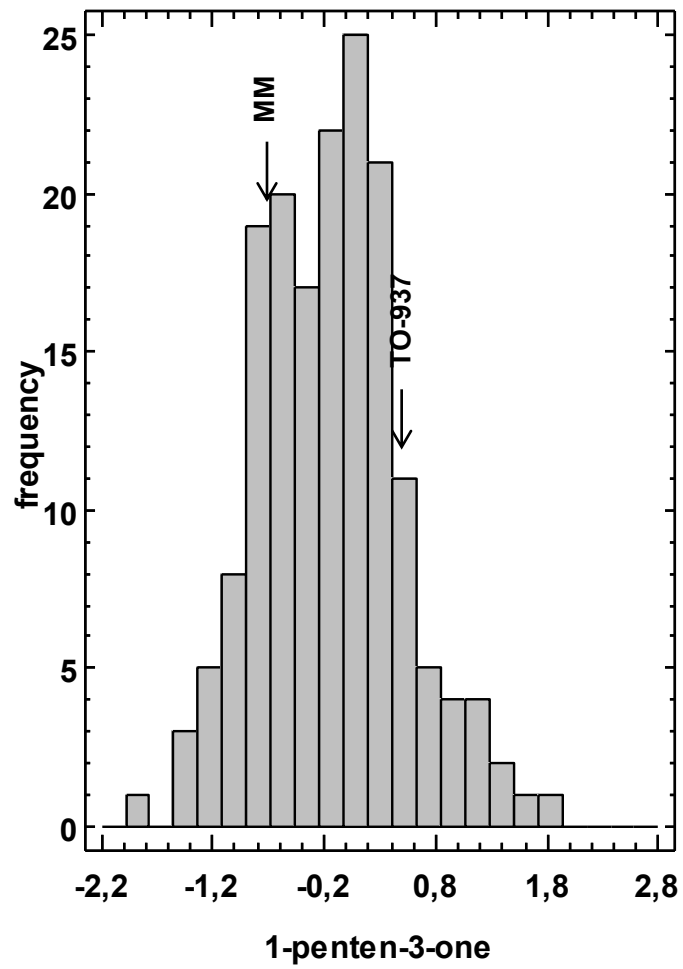


RILs season 3



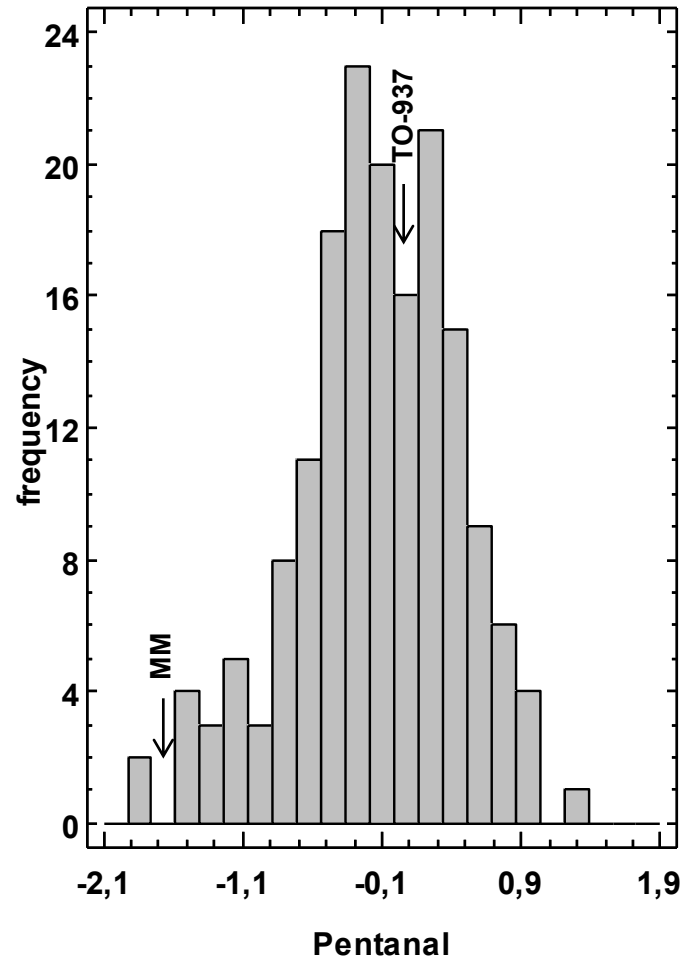
RILs season 3

Histogram



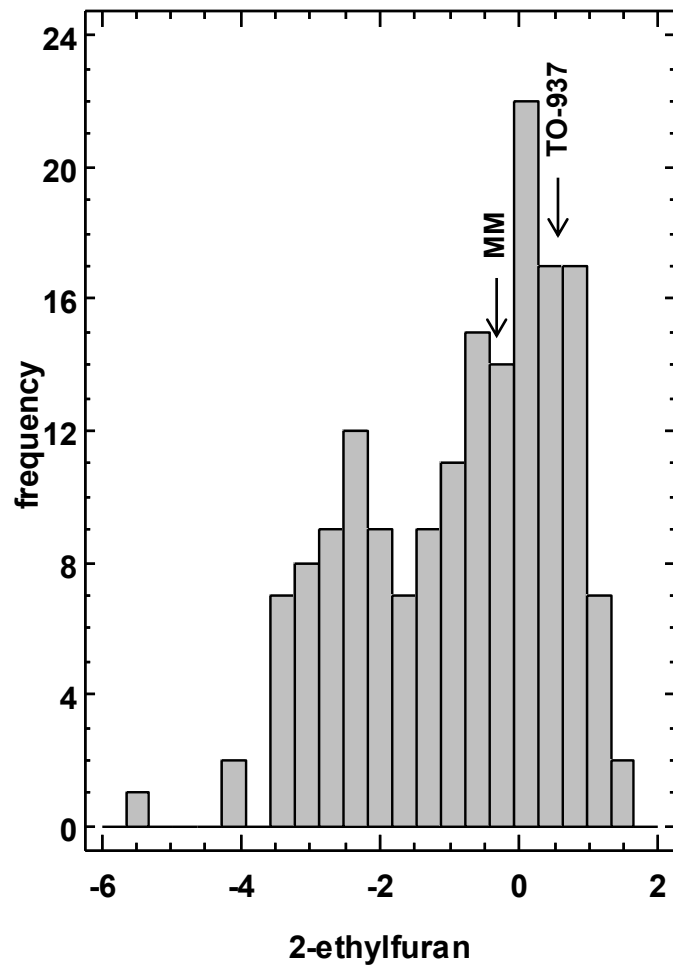
RILs season 3

Histogram



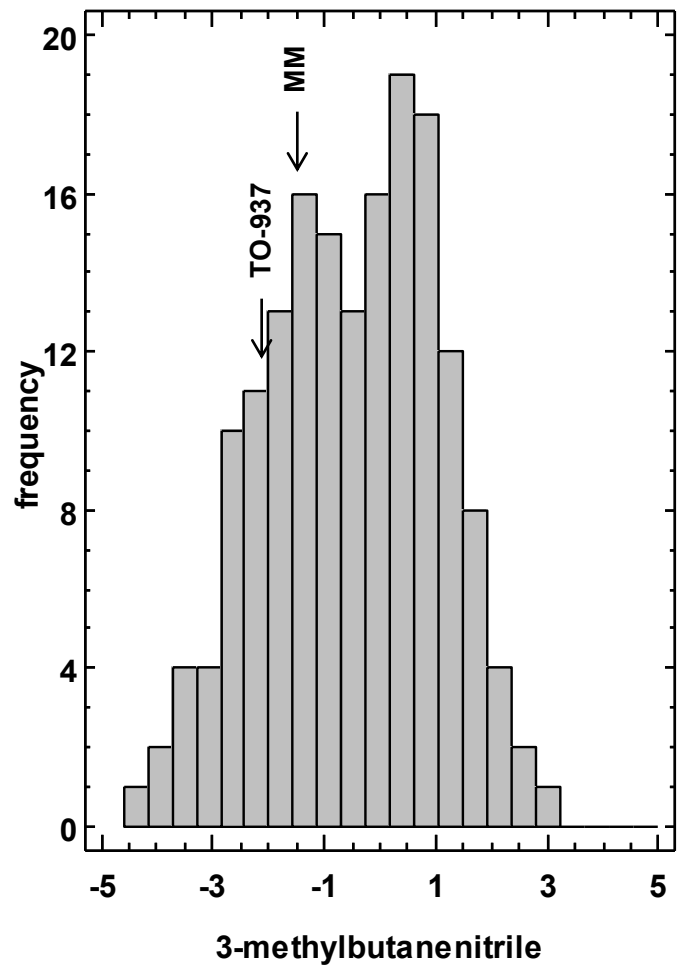
RILs season 3

Histogram

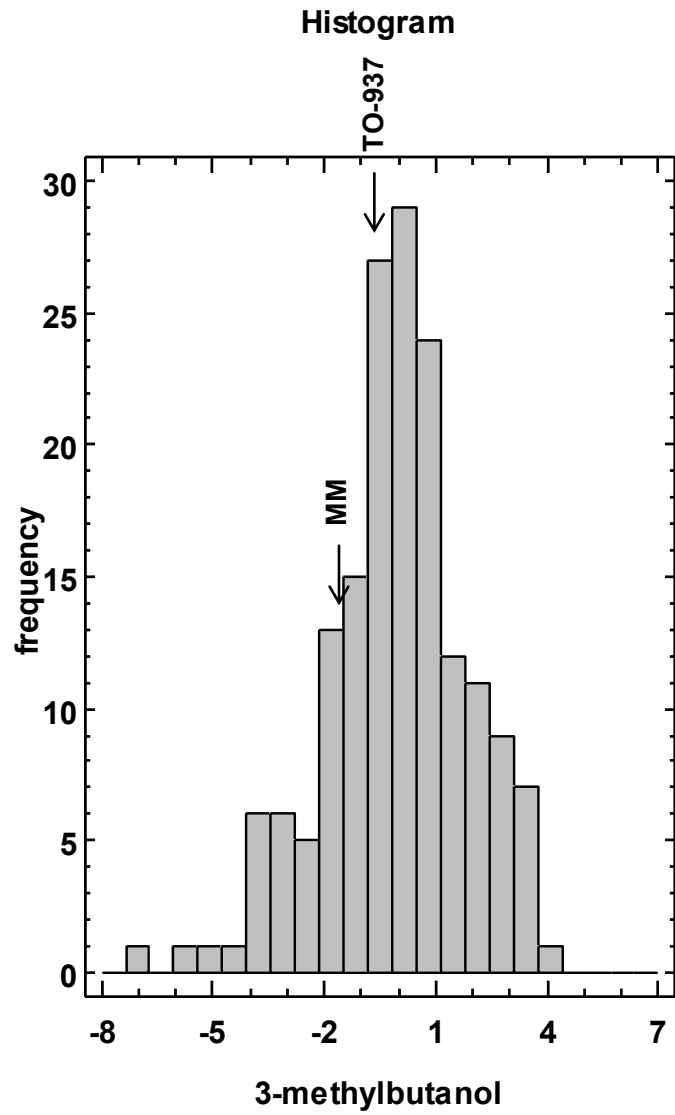


RILs season 3

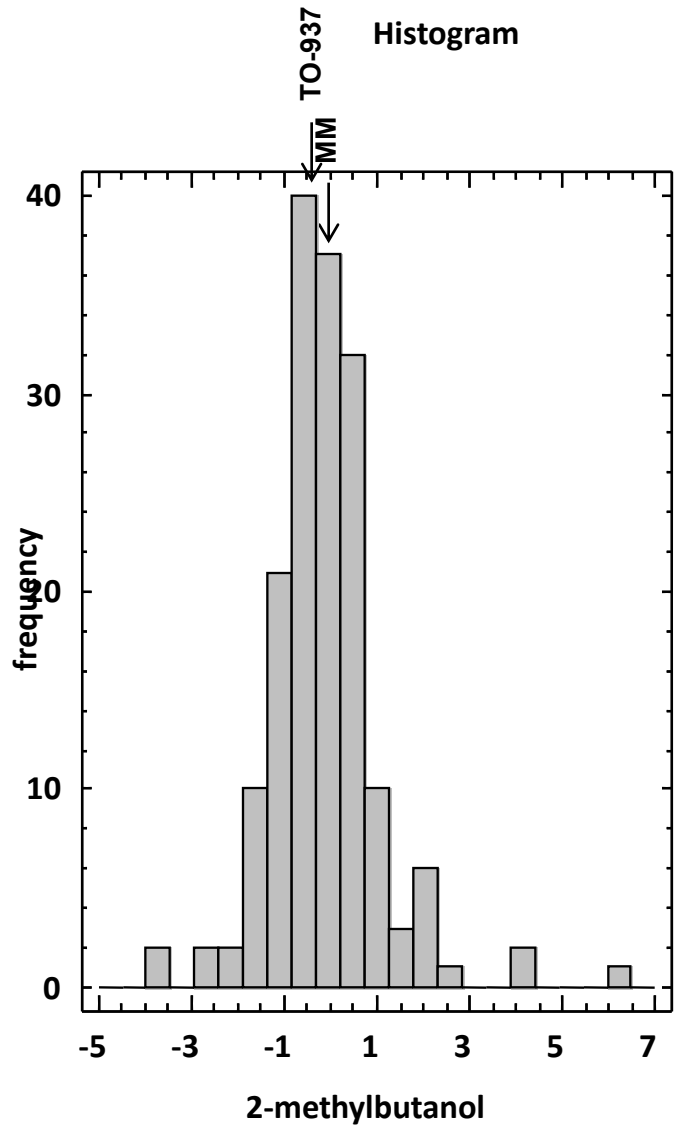
Histogram



RILs season 3

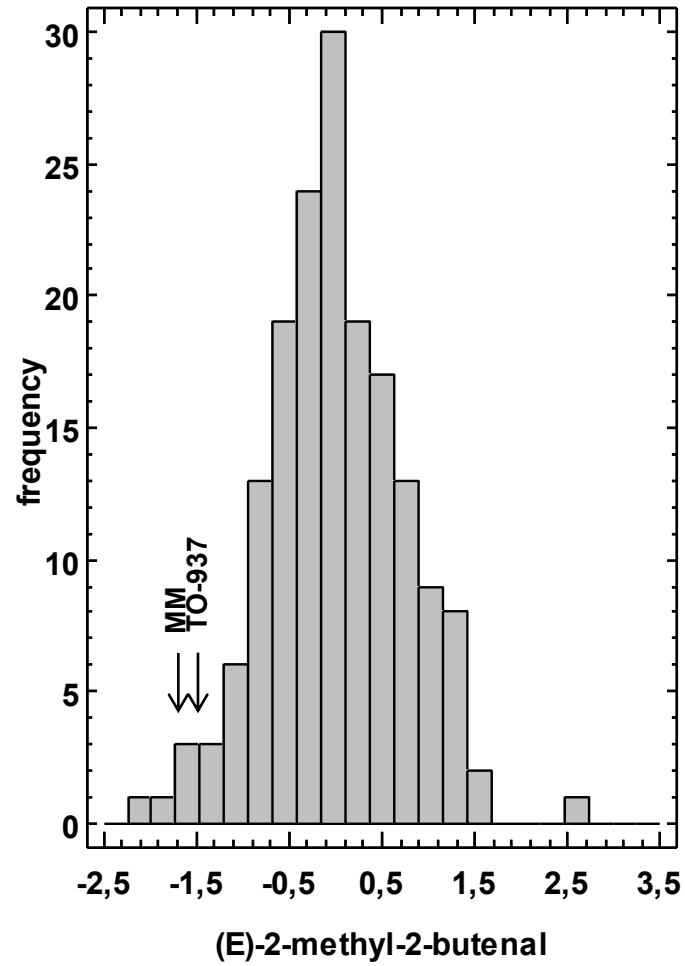


RILs season 3



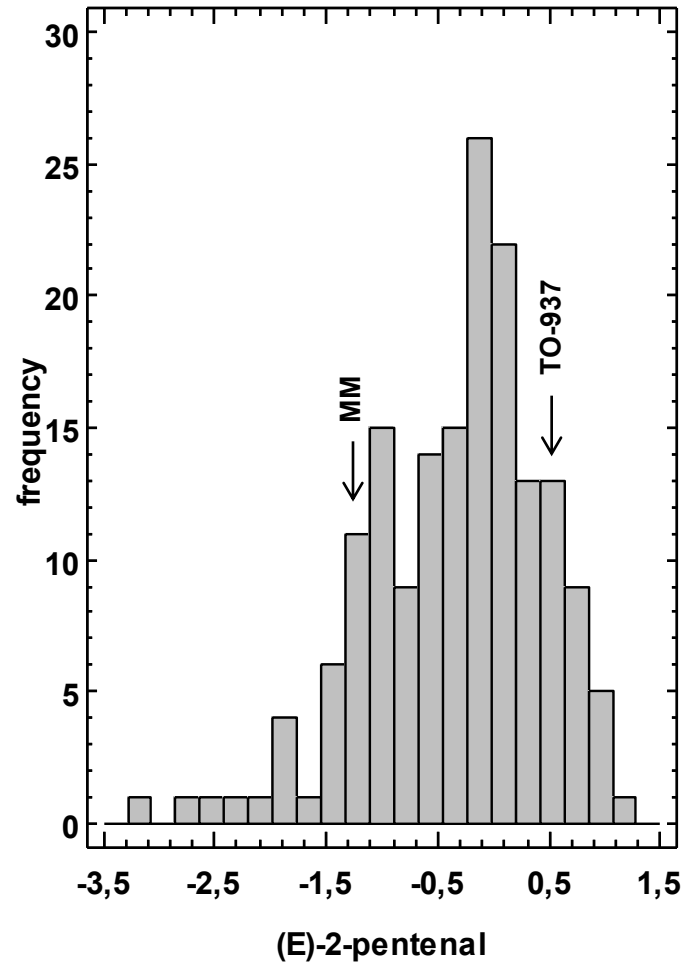
RILs season 3

Histogram



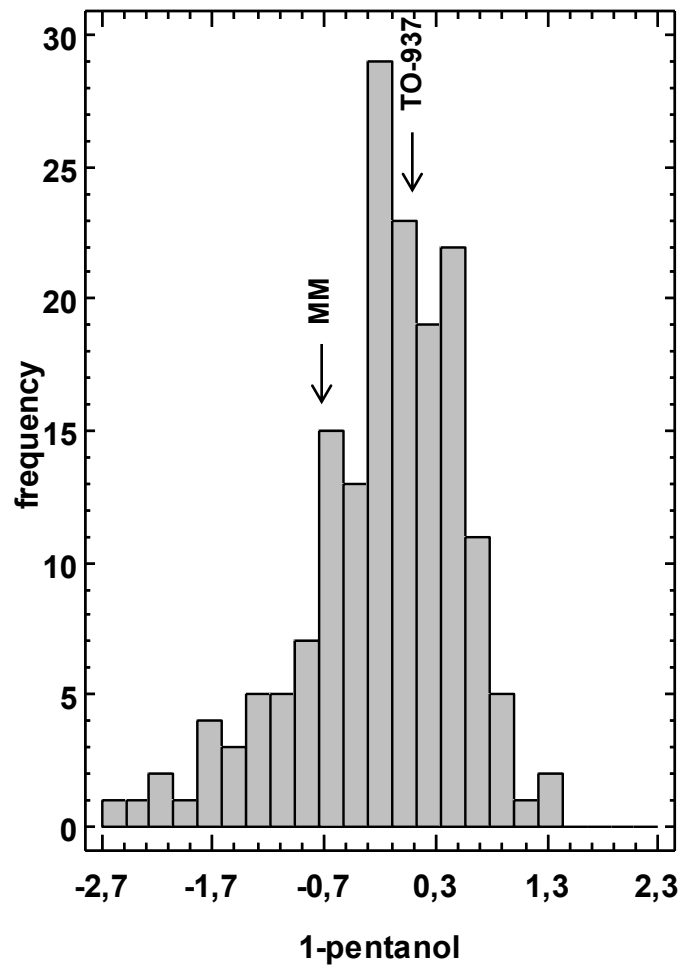
RILs season 3

Histogram

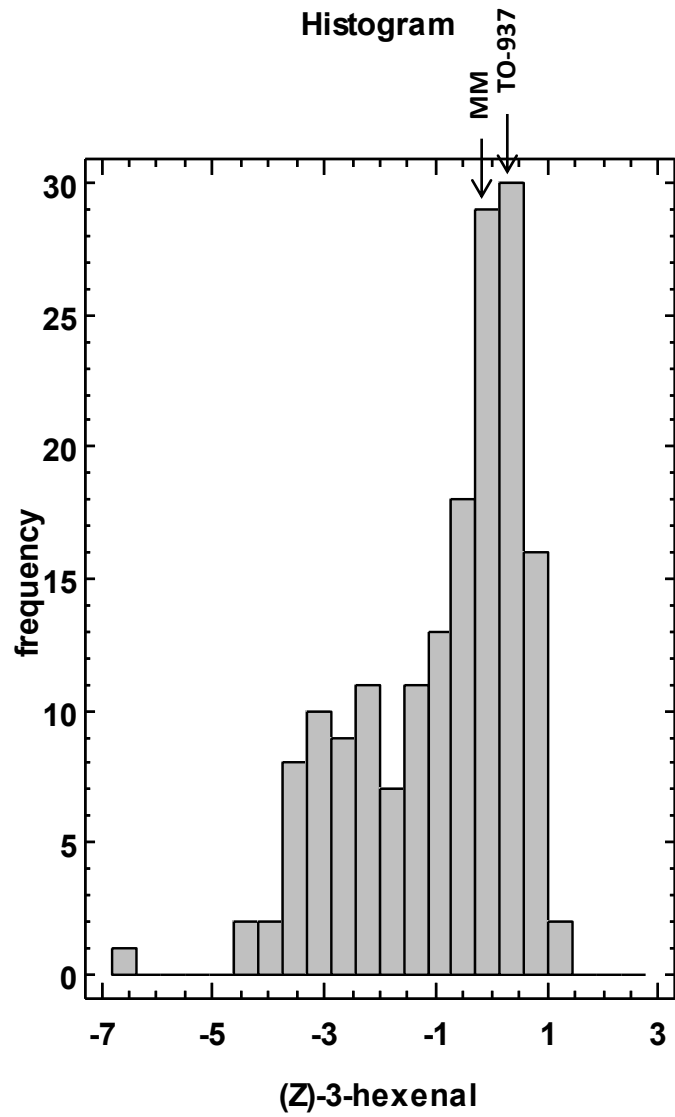


RILs season 3

Histogram

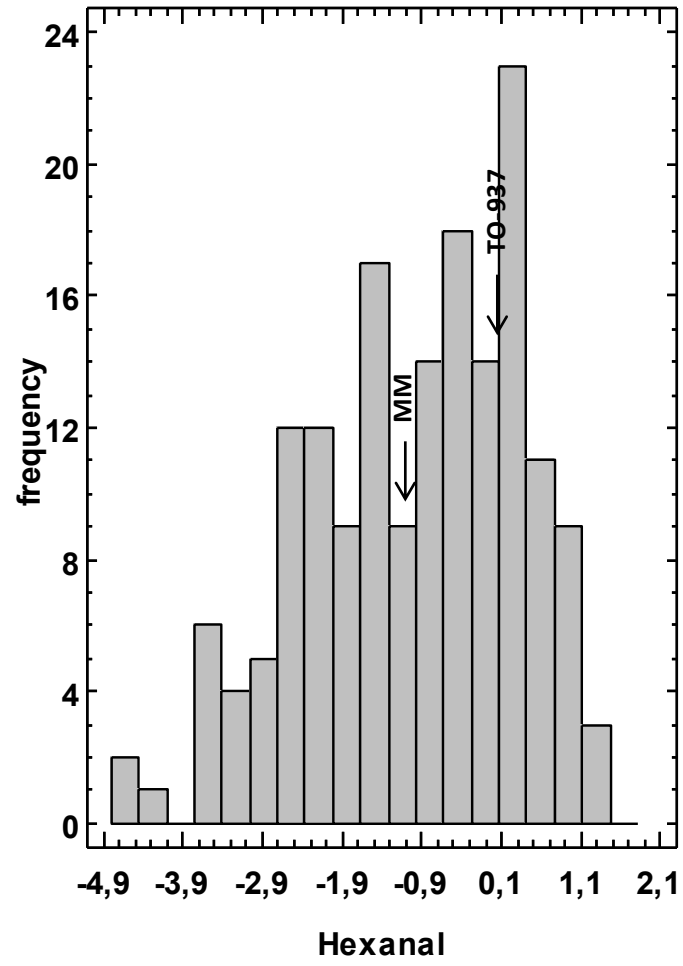


RILs season 3

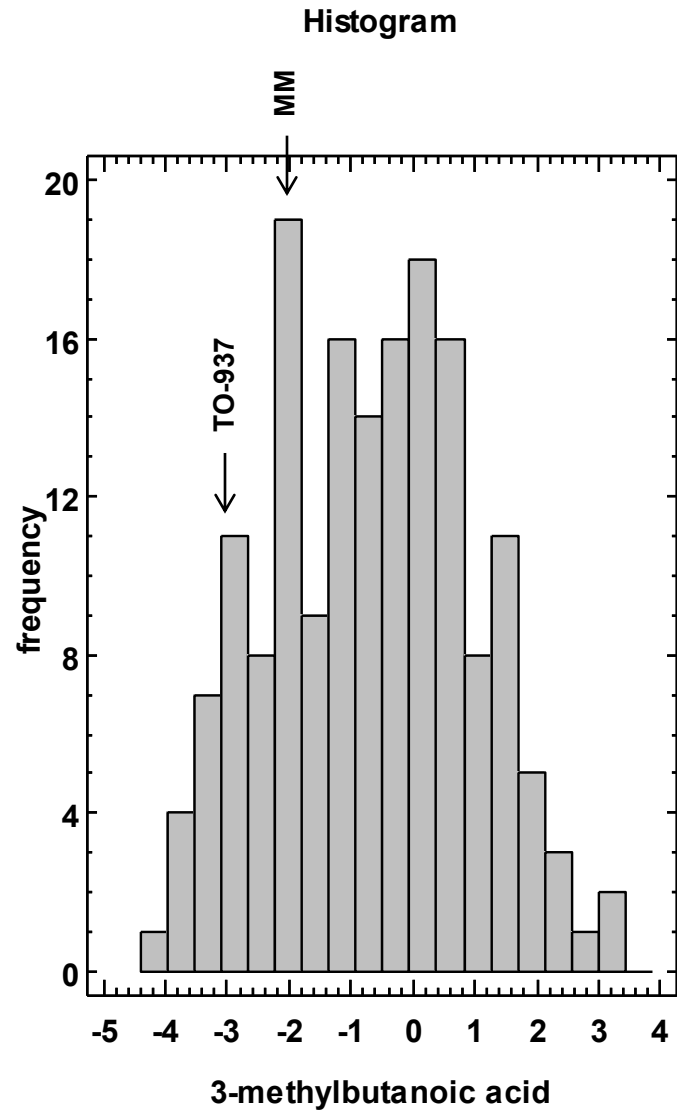


RILs season 3

Histogram

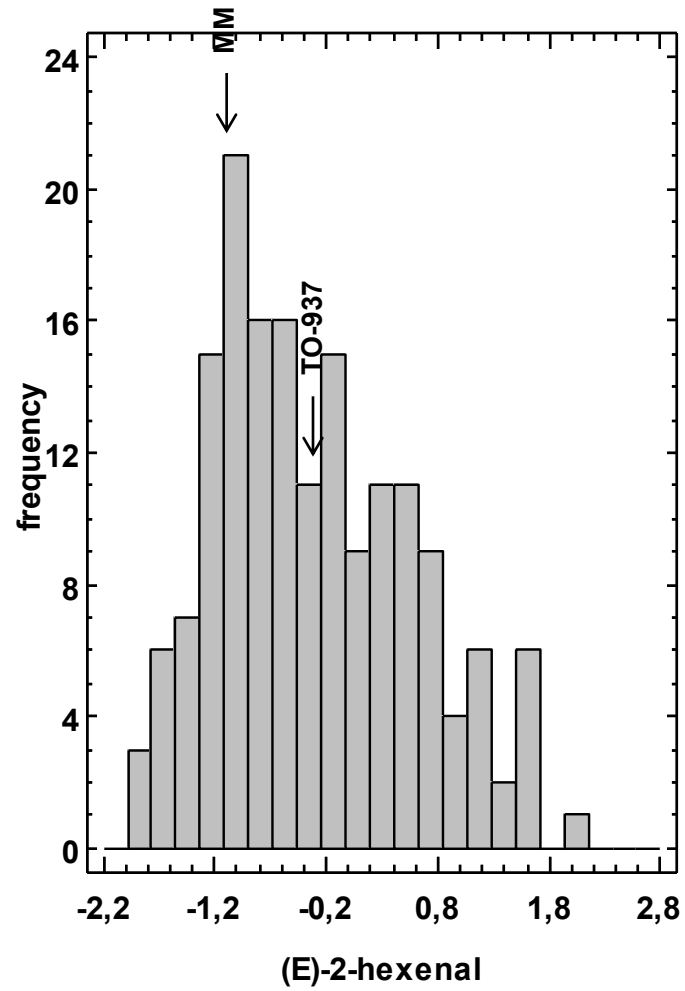


RILs season 3



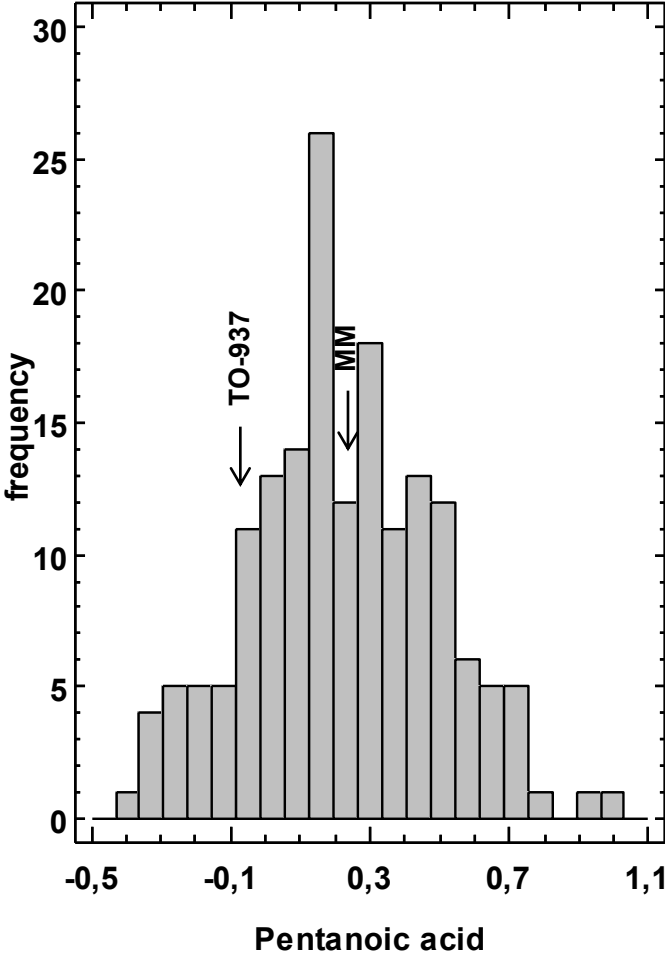
RILs season 3

Histogram

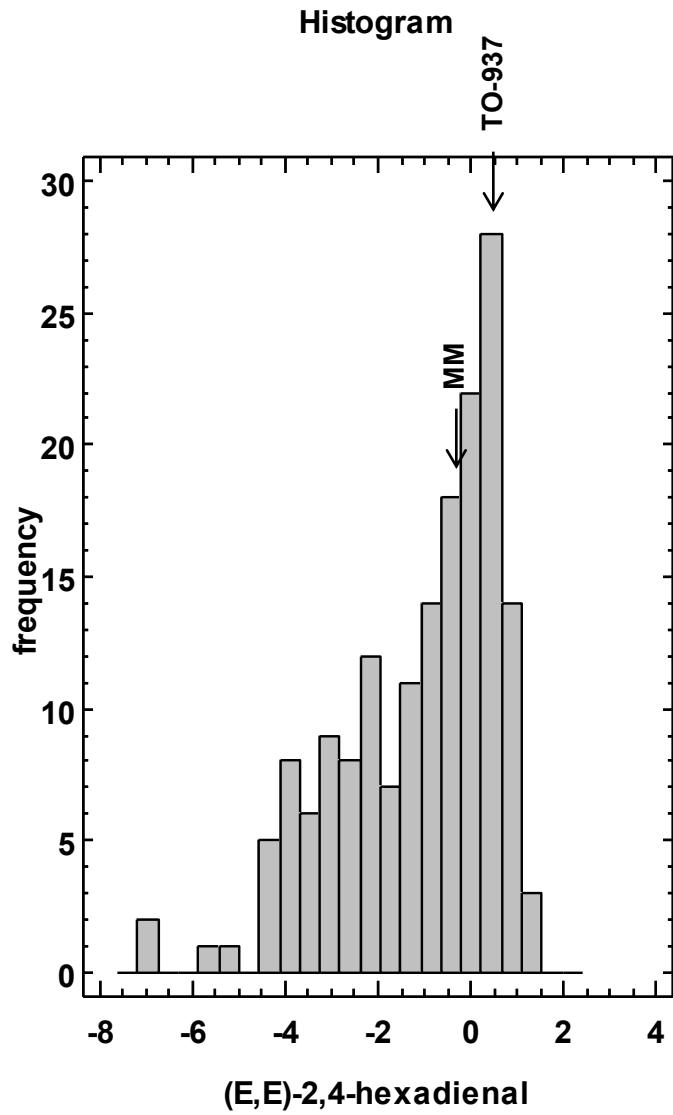


RILs season 3

Histogram

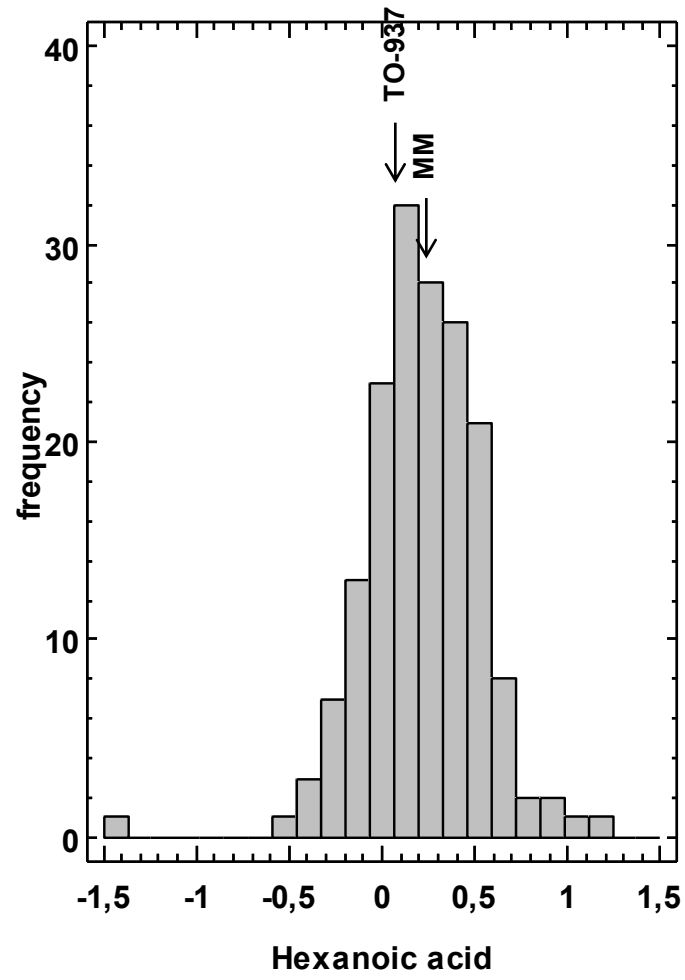


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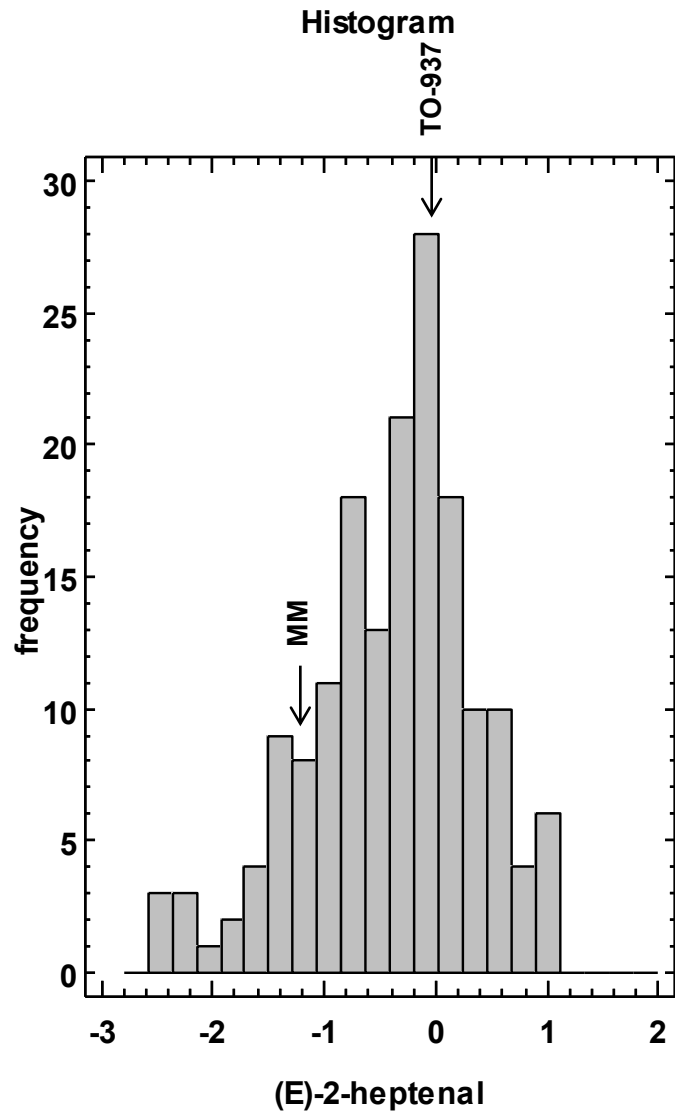


RILs season 3

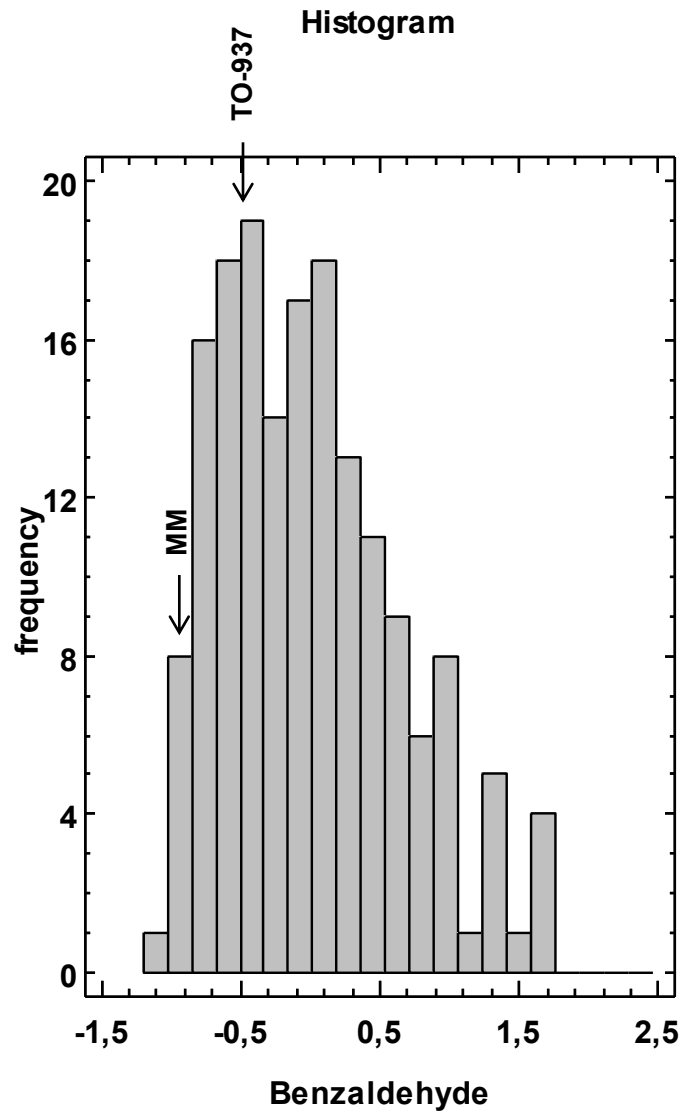
Histogram



RILs season 3

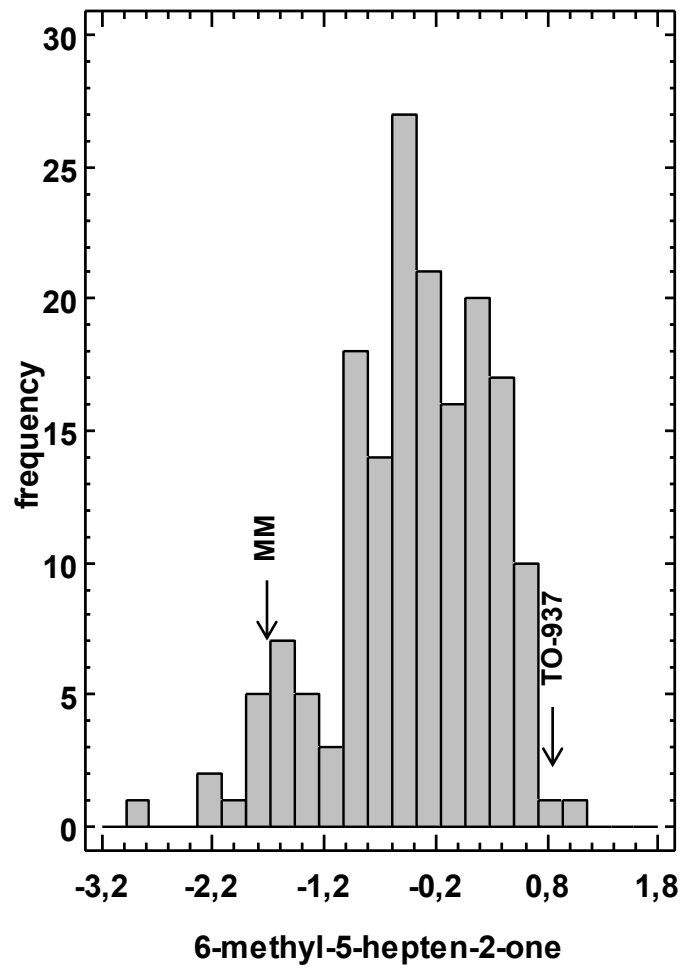


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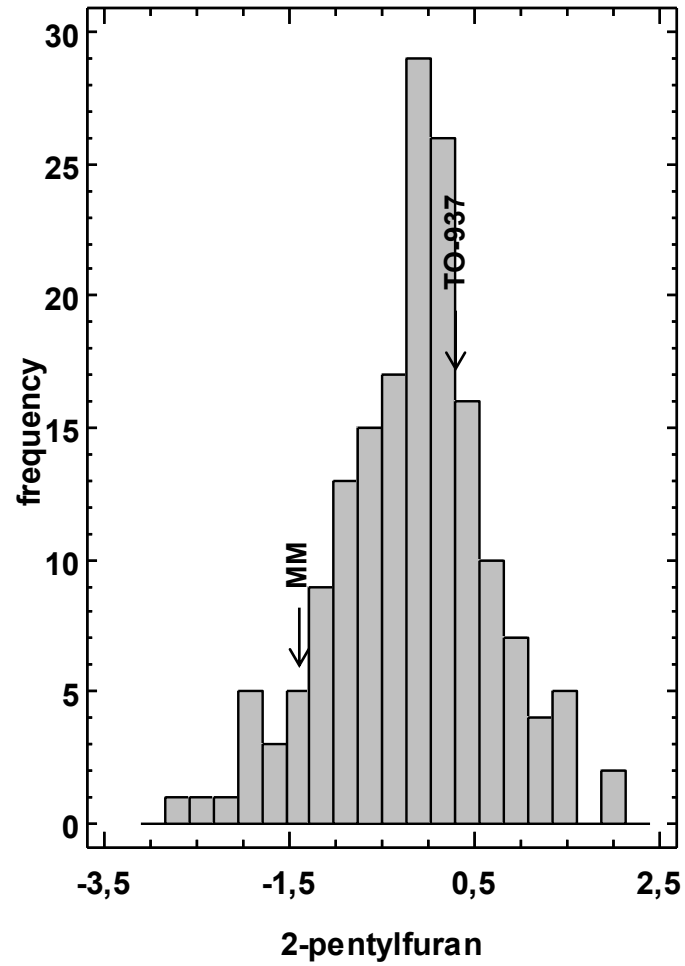
RILs season 3

Histogram



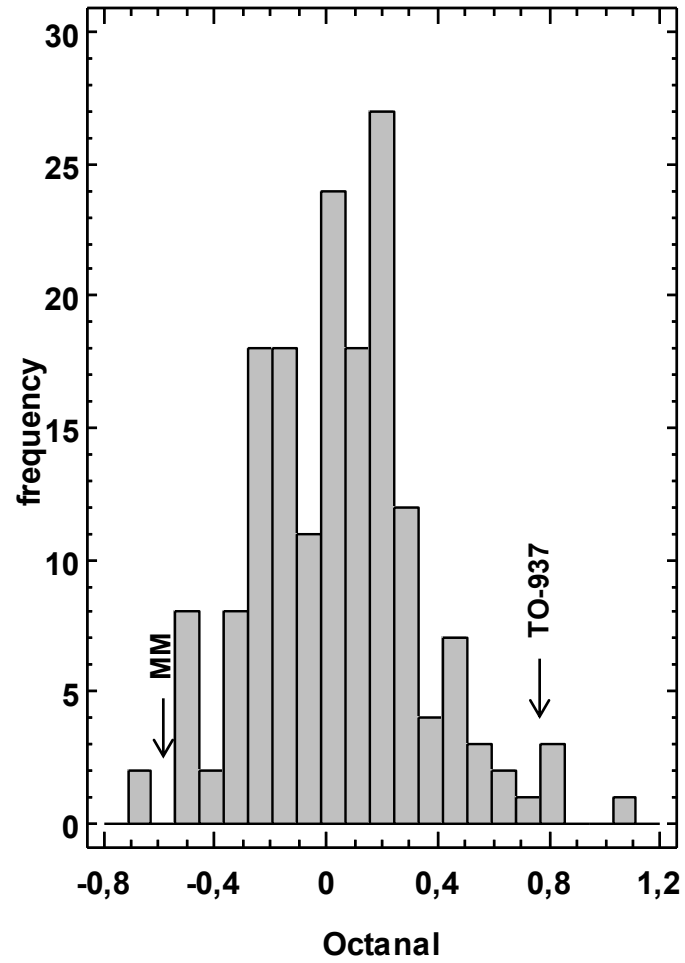
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Histogram



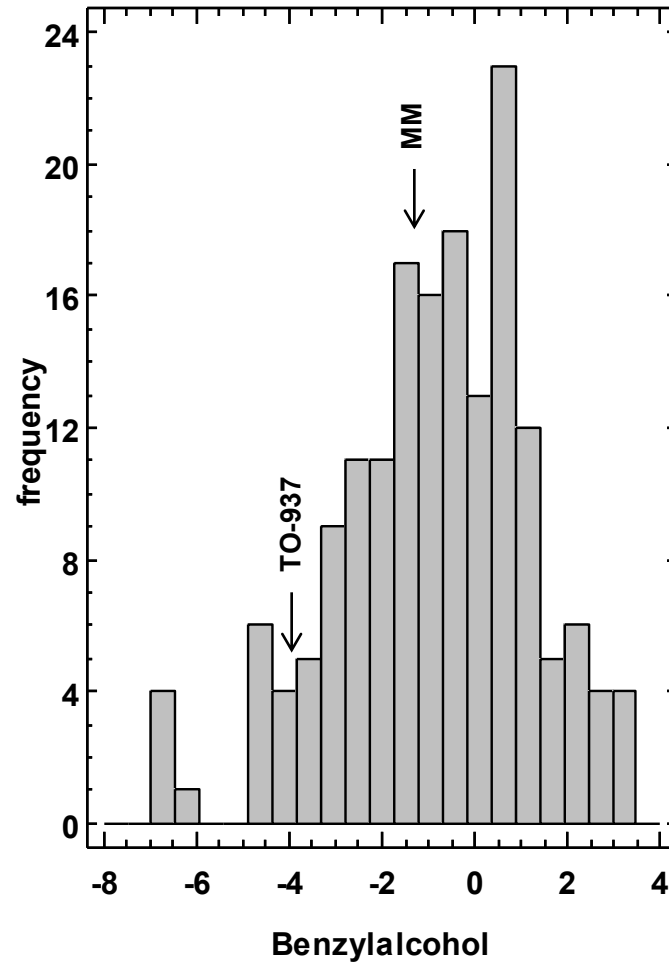
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Histogram

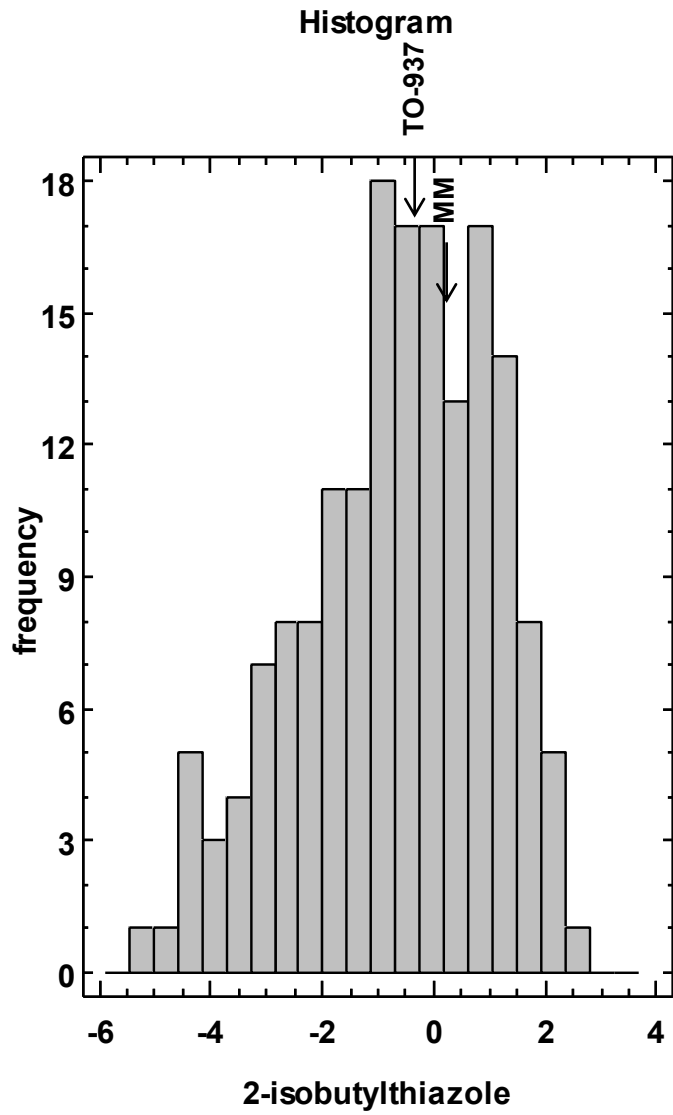


RILs season 3

Histogram

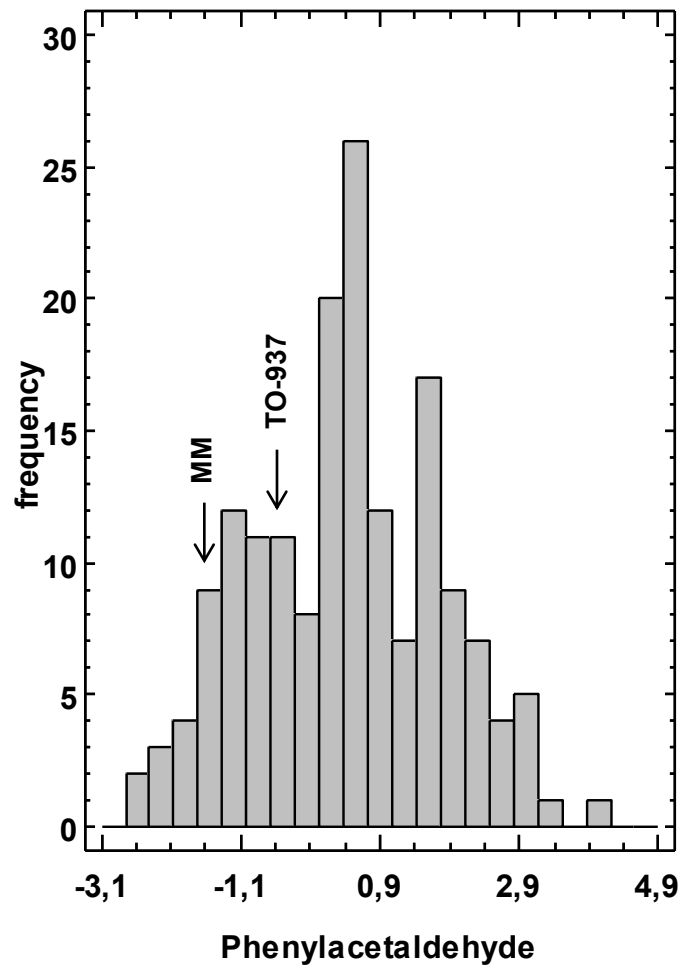


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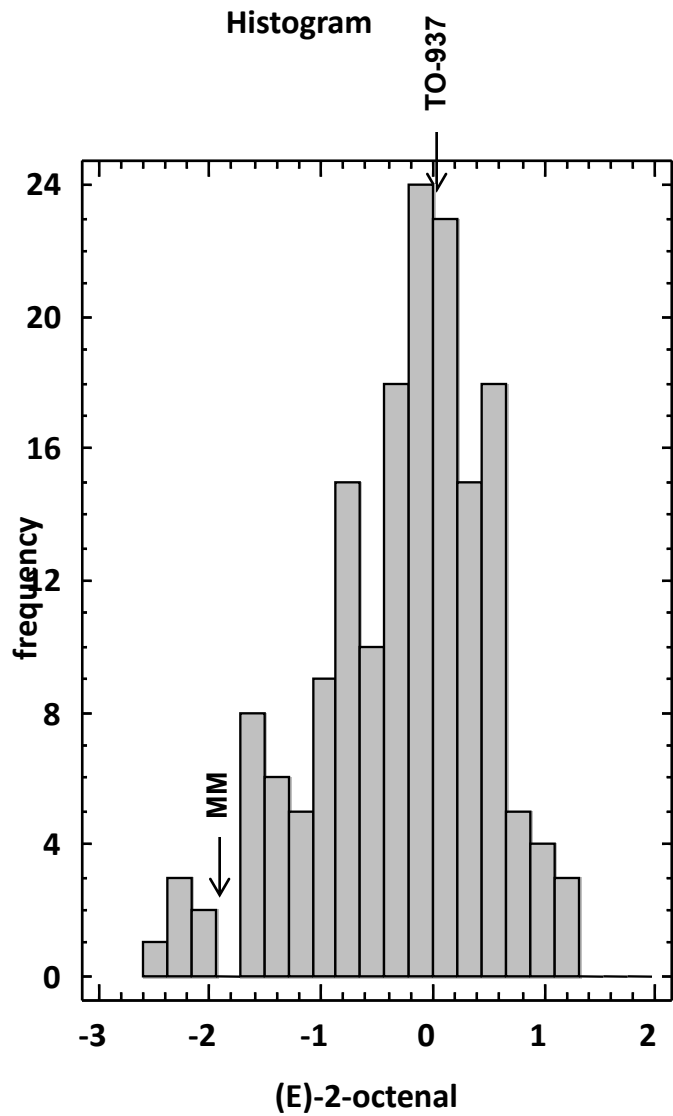


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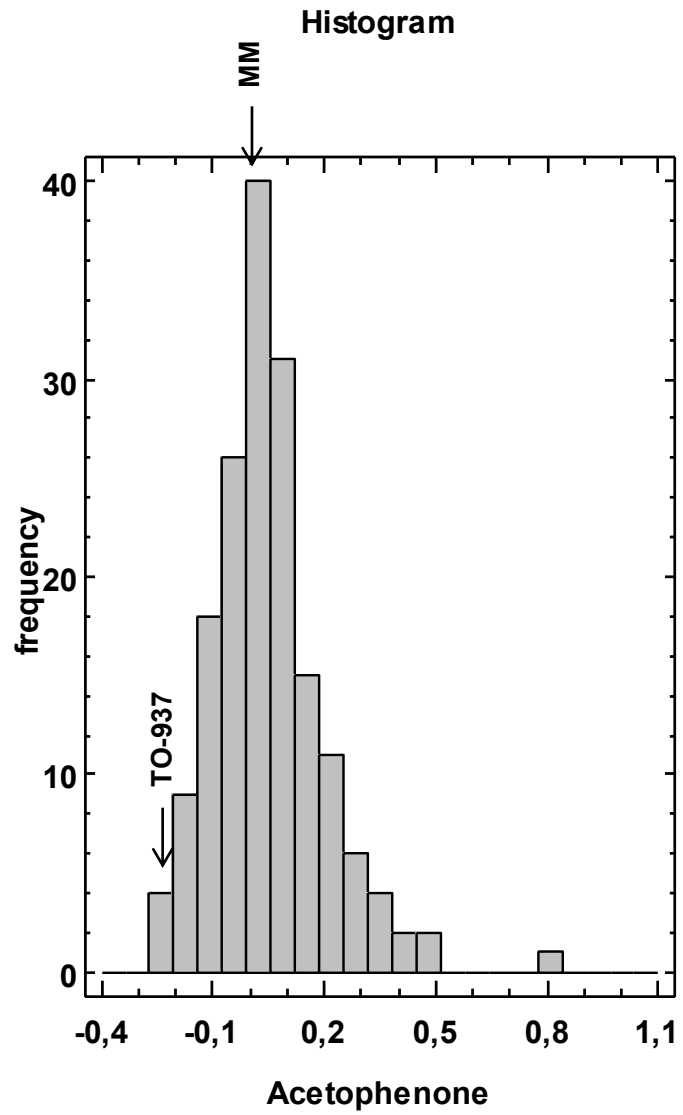
Histogram



RILs season 3

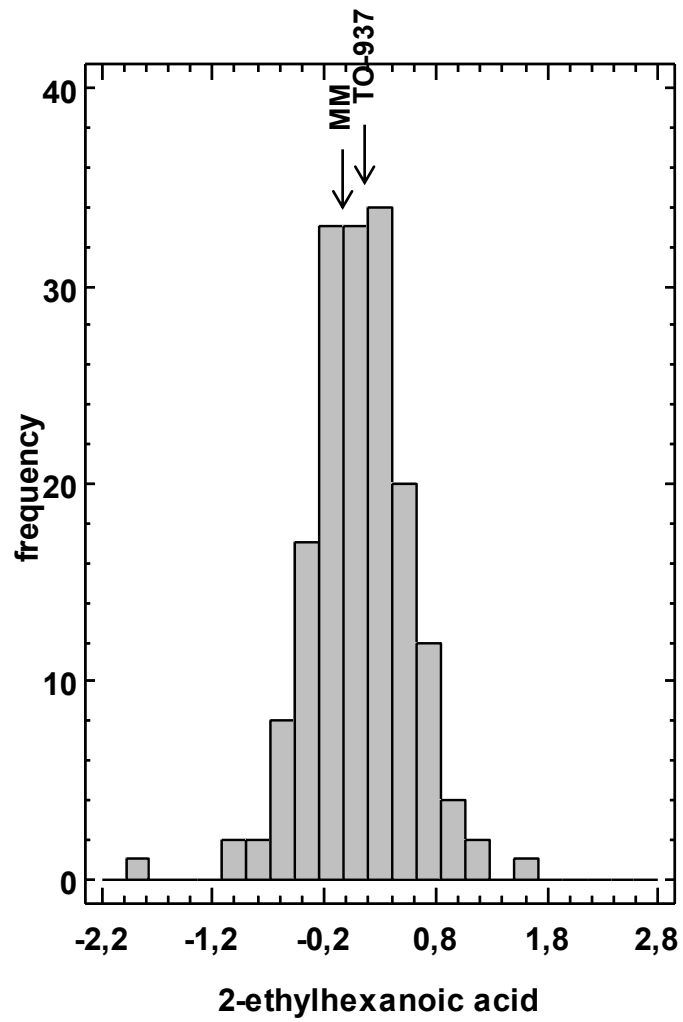


RILs season 3



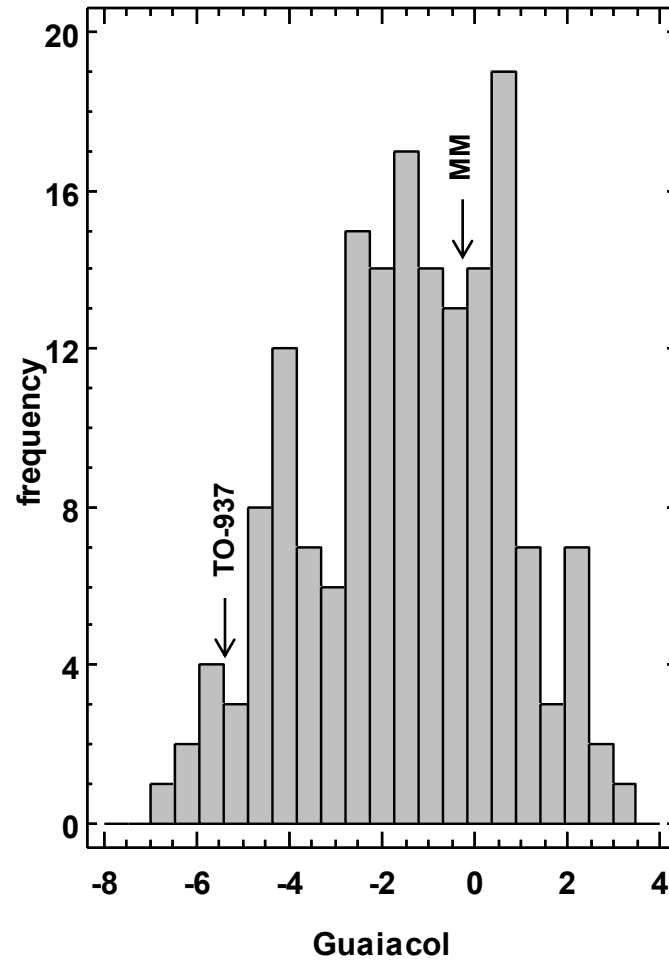
RILs season 3

Histogram



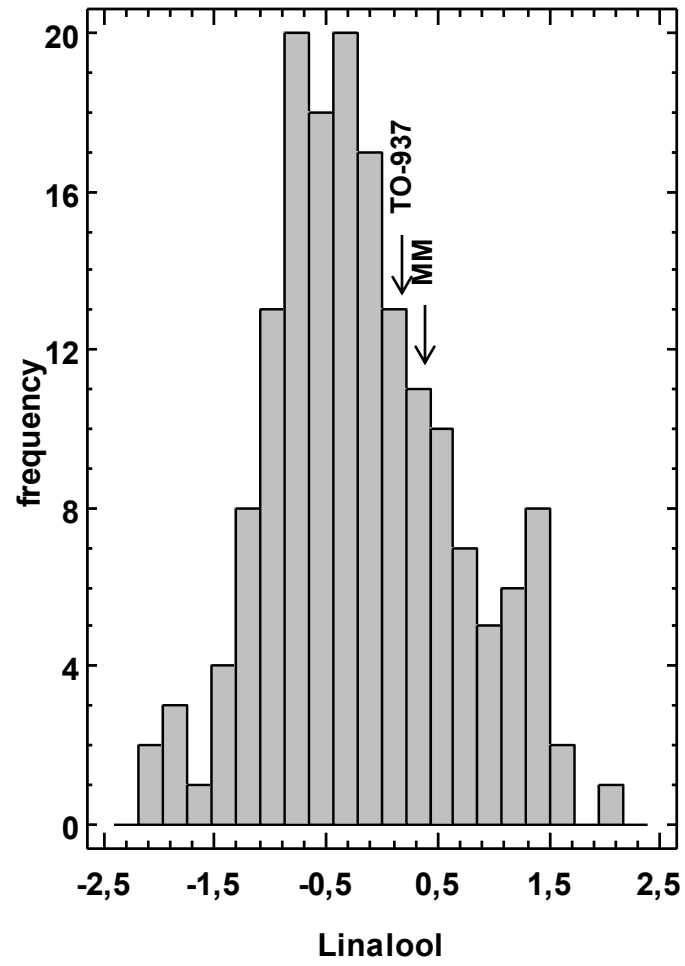
RILs season 3

Histogram



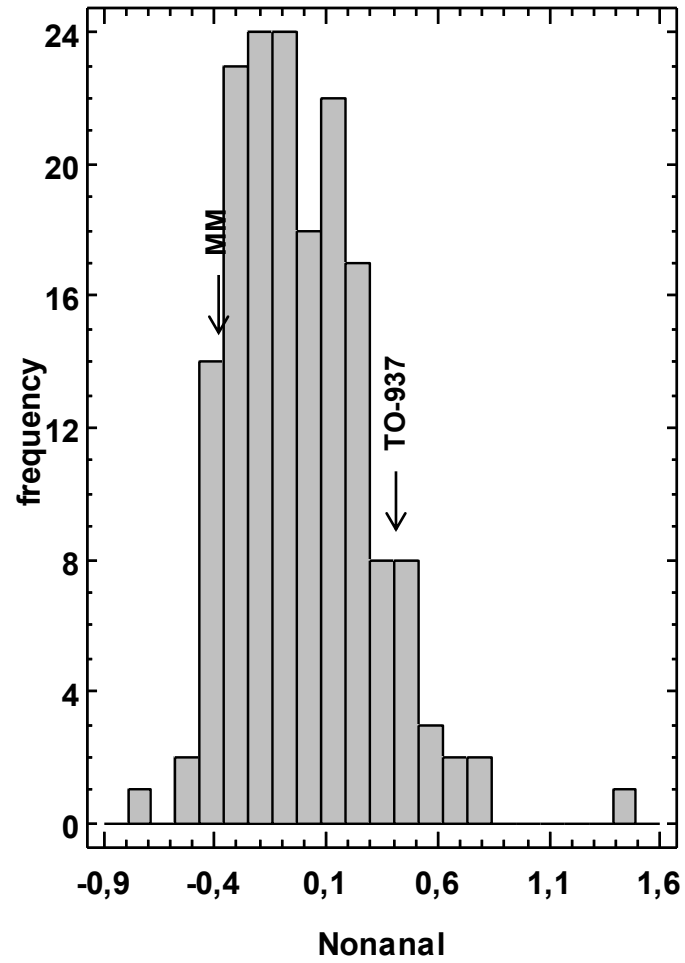
RILs season 3

Histogram



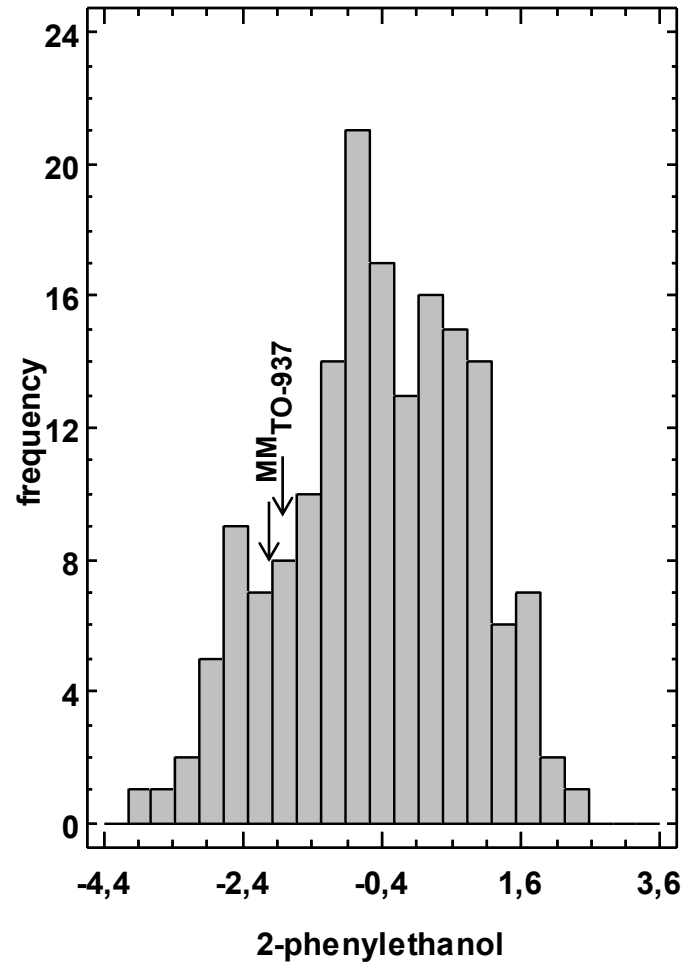
RILs season 3

Histogram



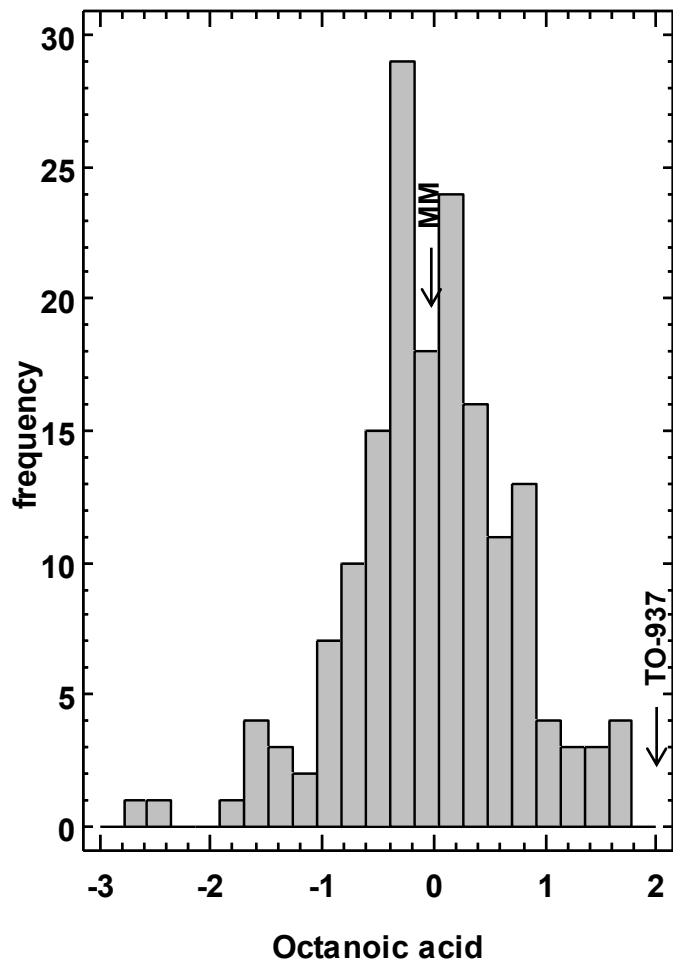
RILs season 3

Histogram

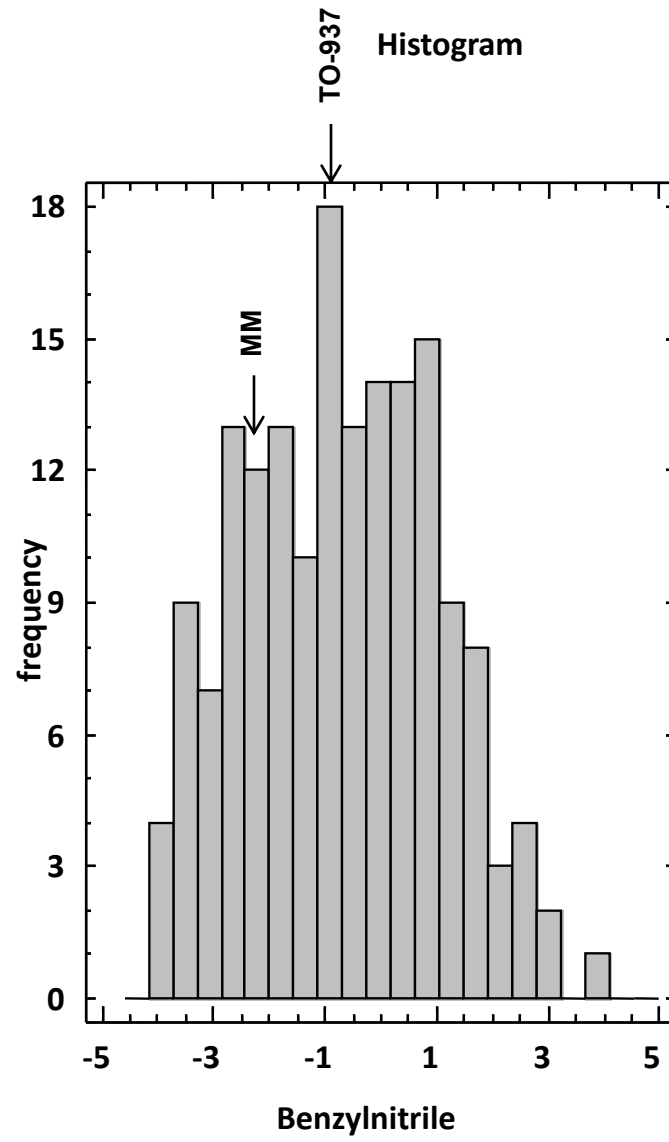


RILs season 3

Histogram

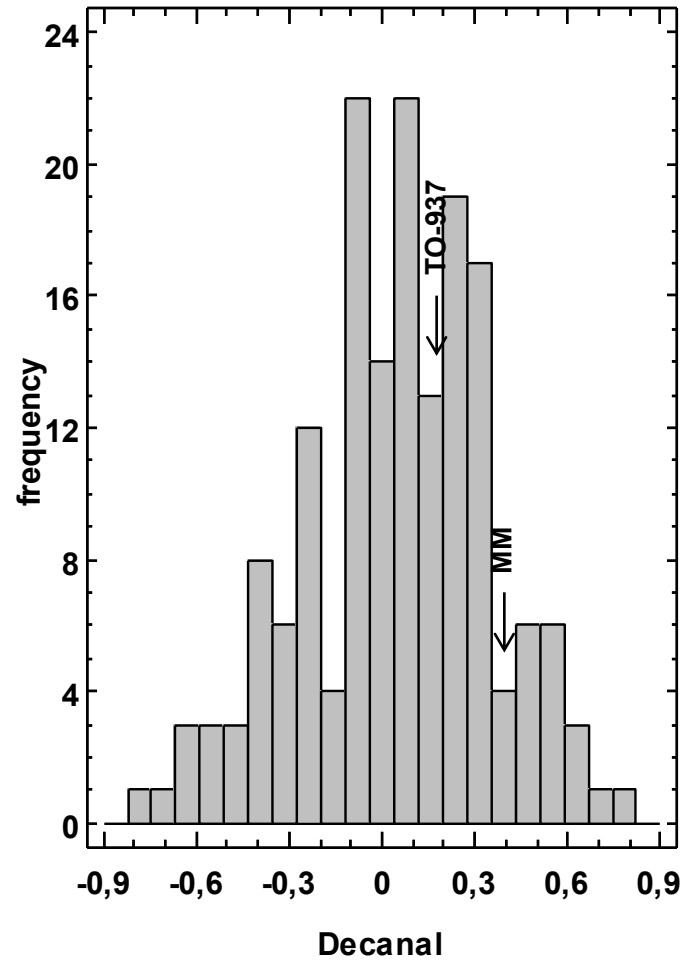


RILs season 3



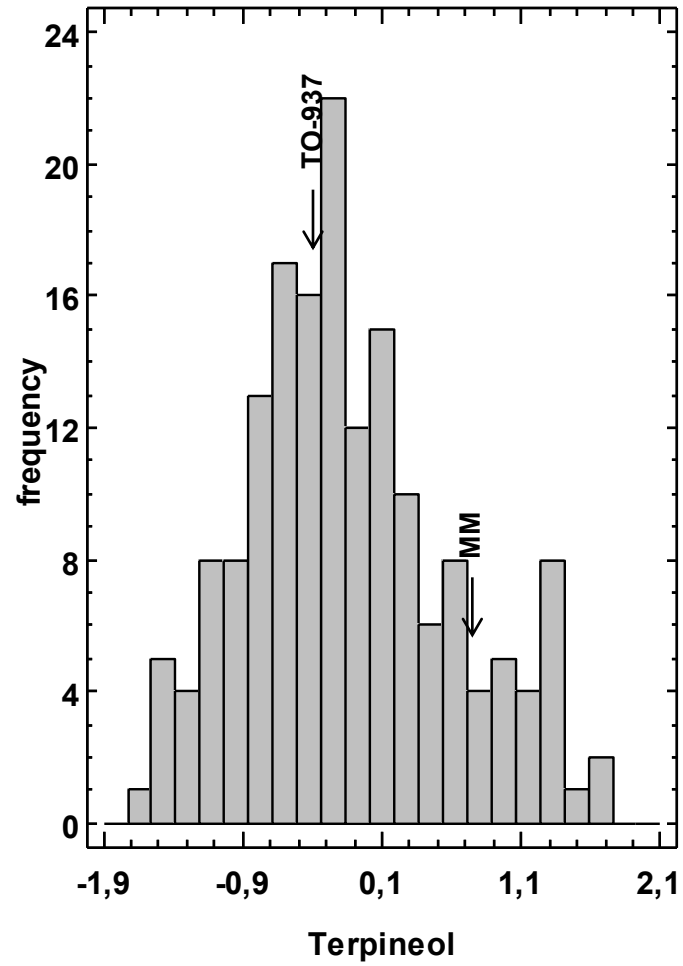
RILs season 3

Histogram



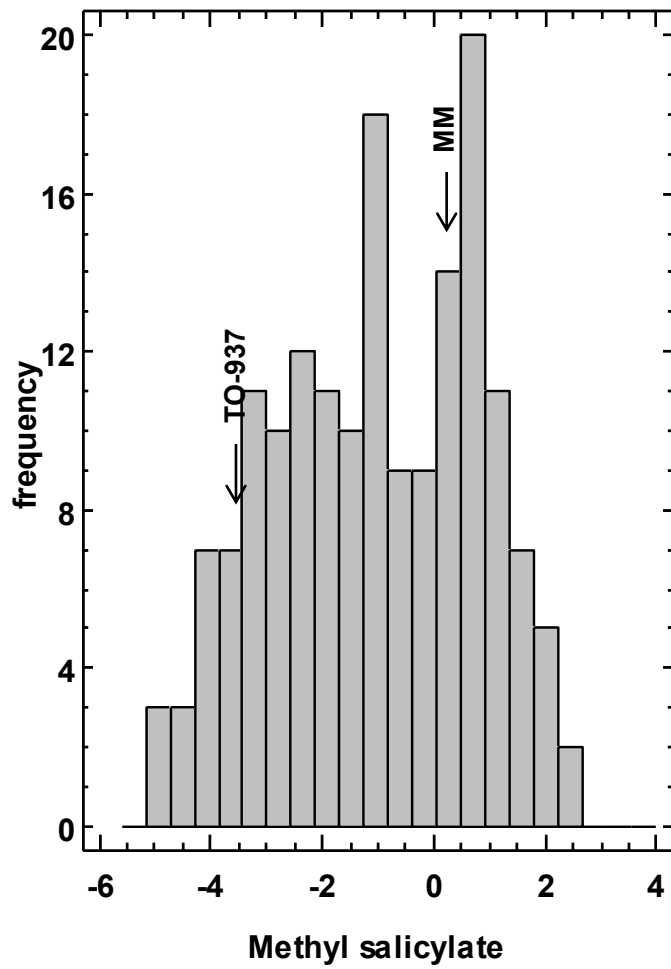
RILs season 3

Histogram



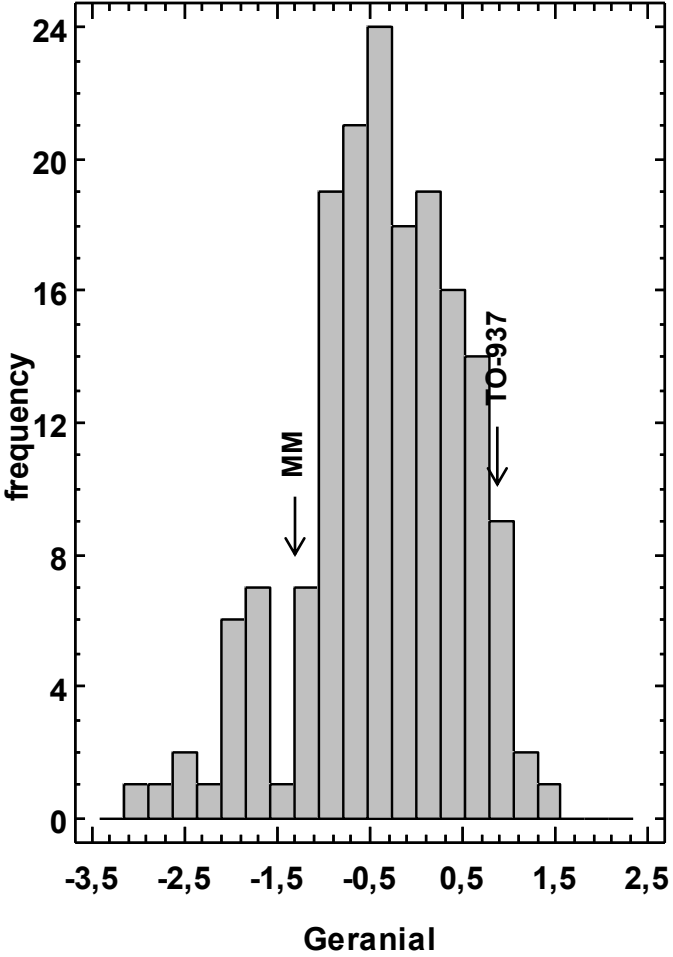
RILs season 3

Histogram



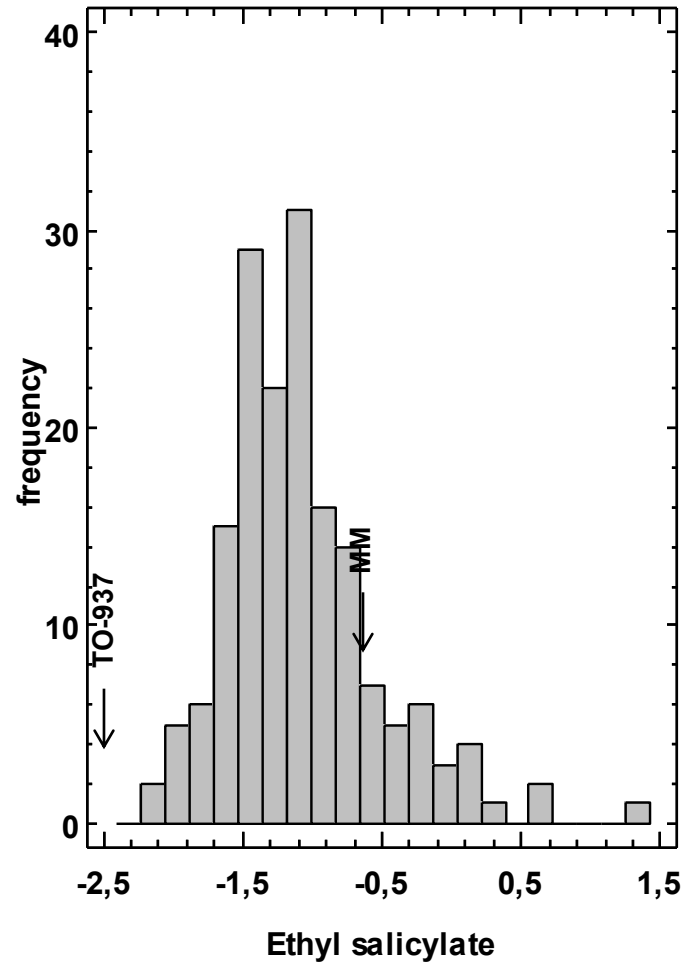
RILs season 3

Histogram



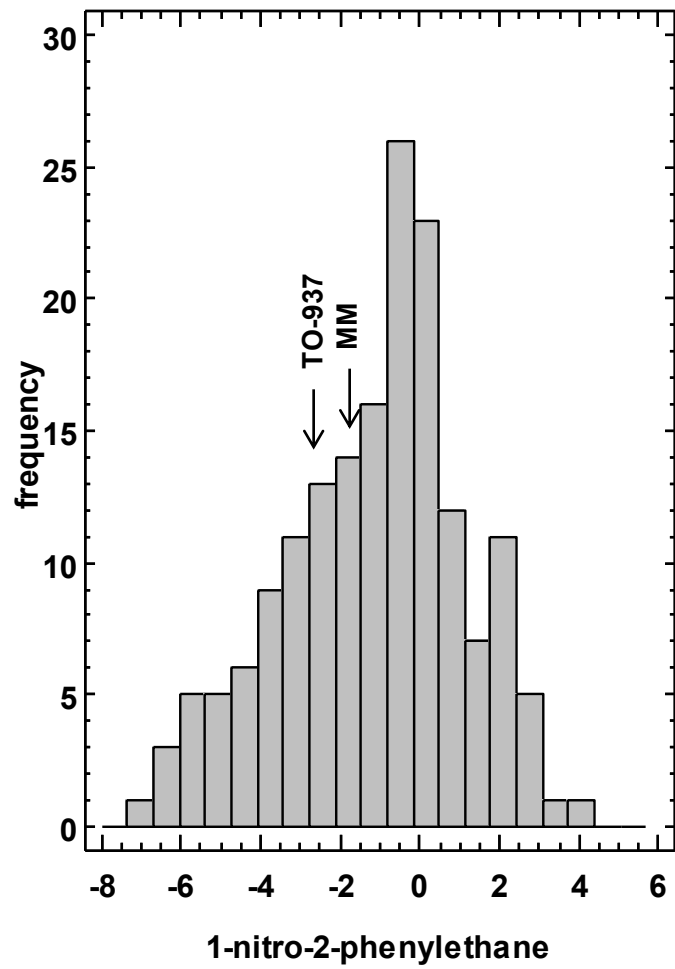
RILs season 3

Histogram



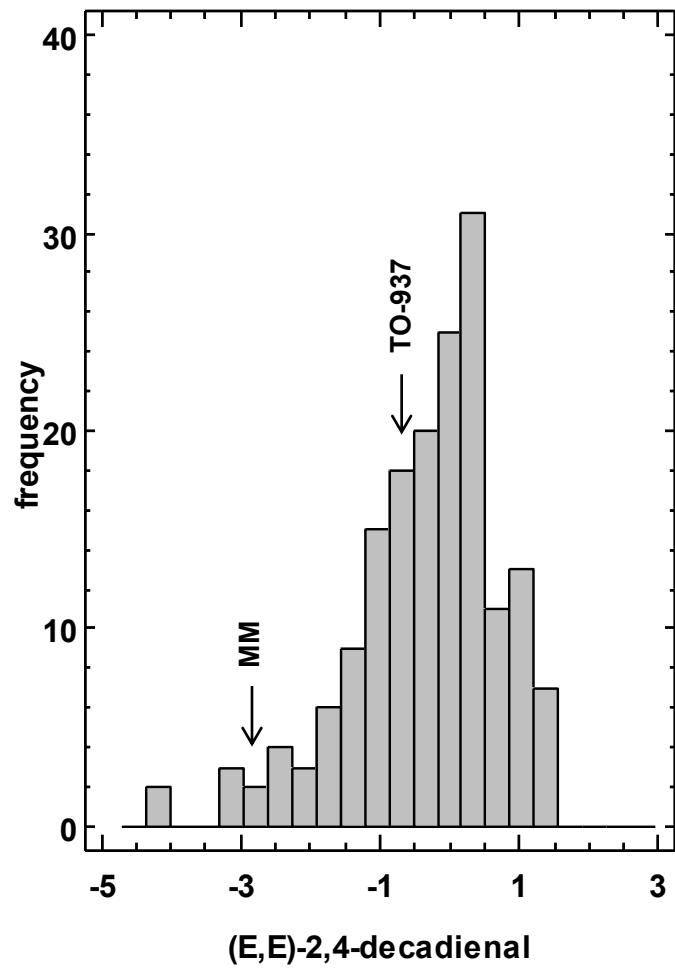
RILs season 3

Histogram



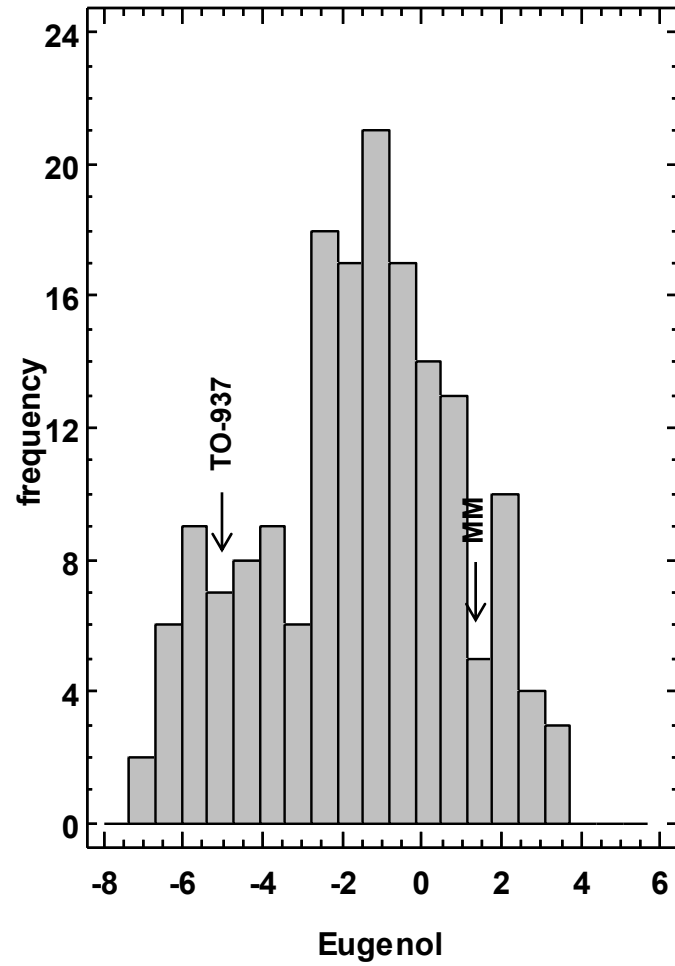
RILs season 3

Histogram



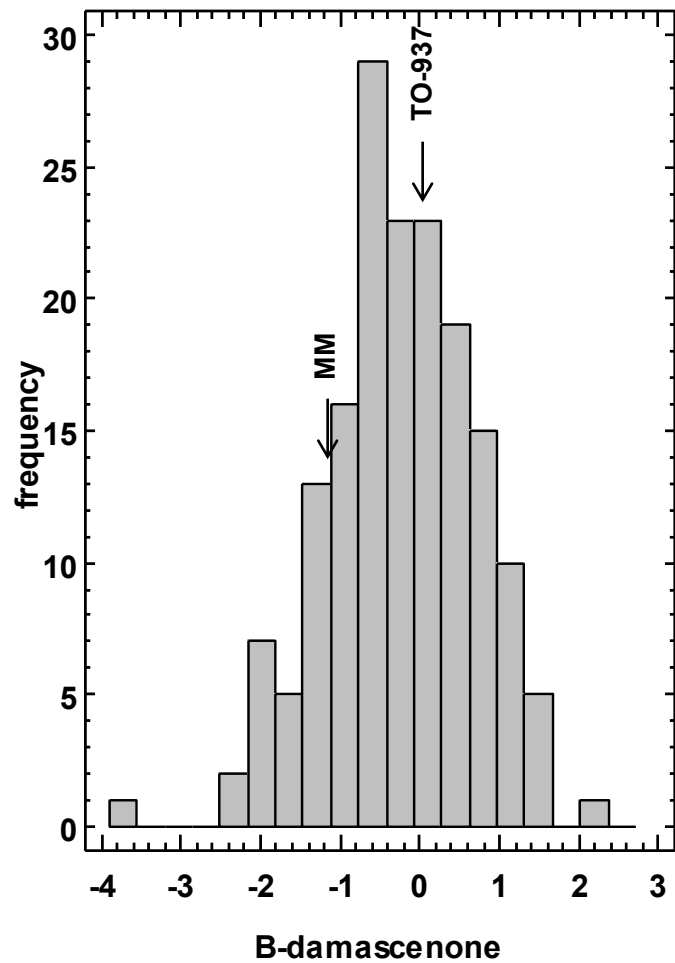
RILs season 3

Histogram



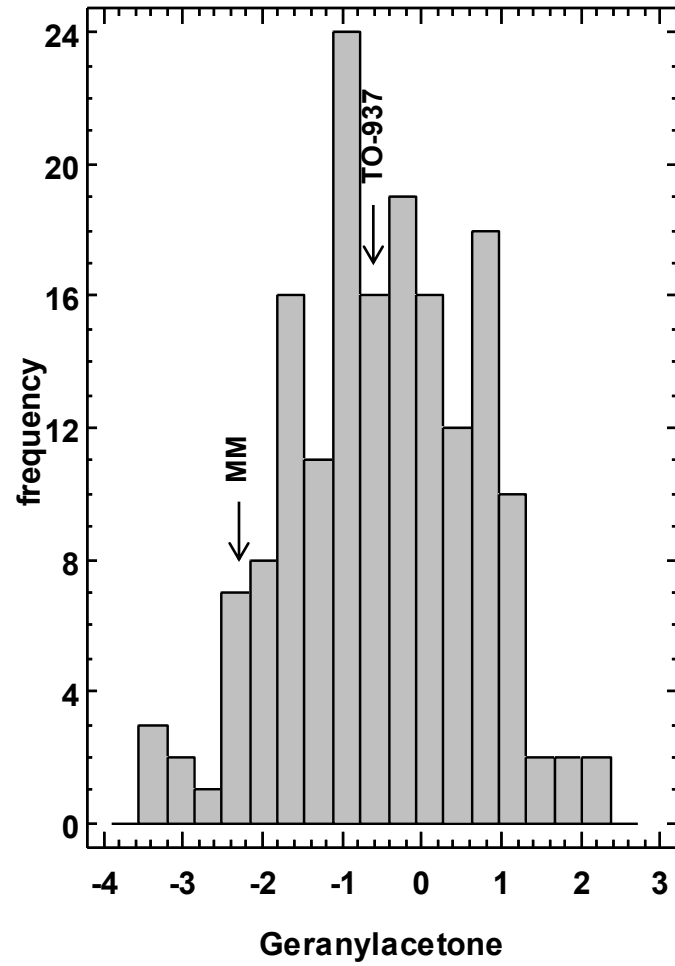
RILs season 3

Histogram



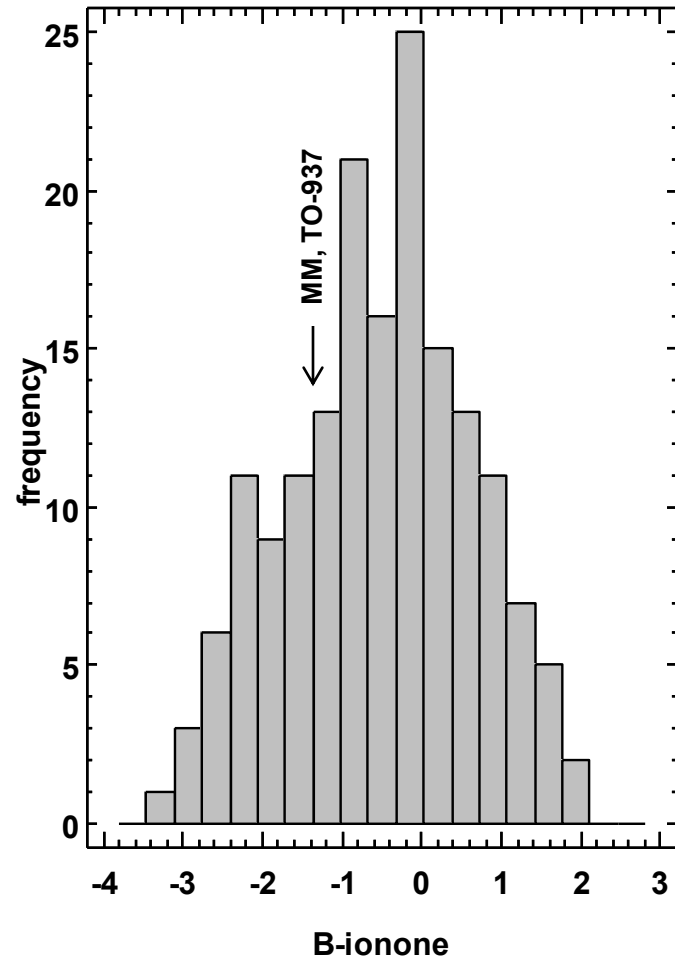
RILs season 3

Histogram



RILs season 3

Histogram



RILs season 3

Histogram

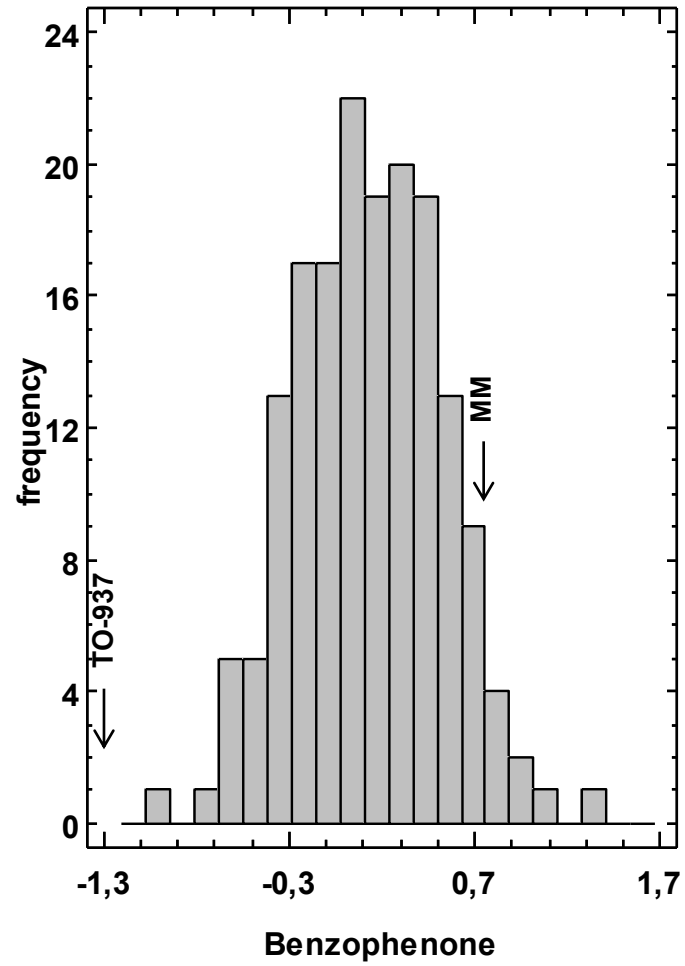


Figure S3. Hierarchical clusters of volatiles in seasons 2 and 3 independently and an evaluation of the degree of similarity.

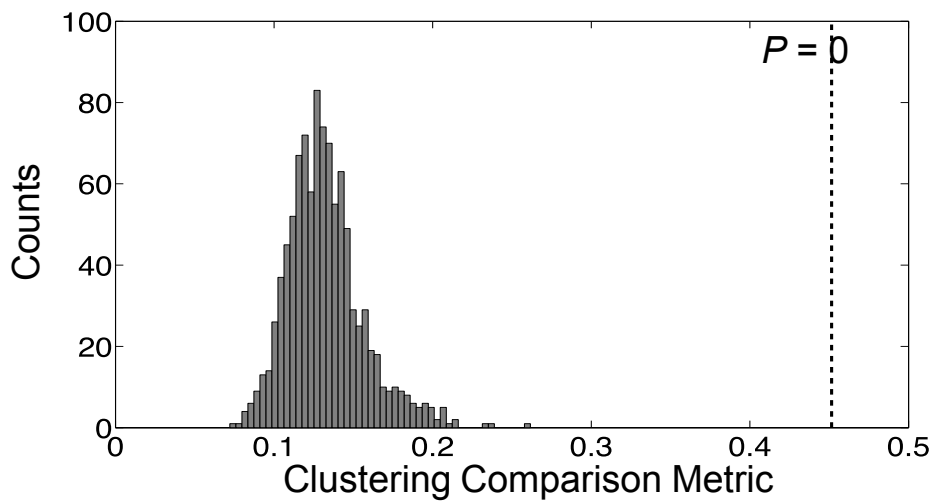
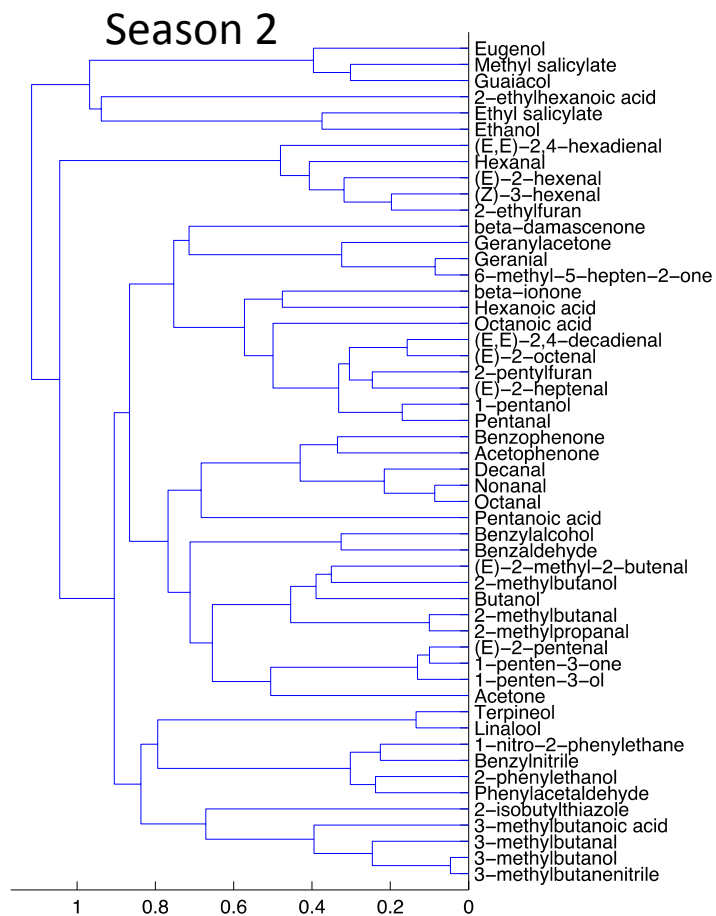
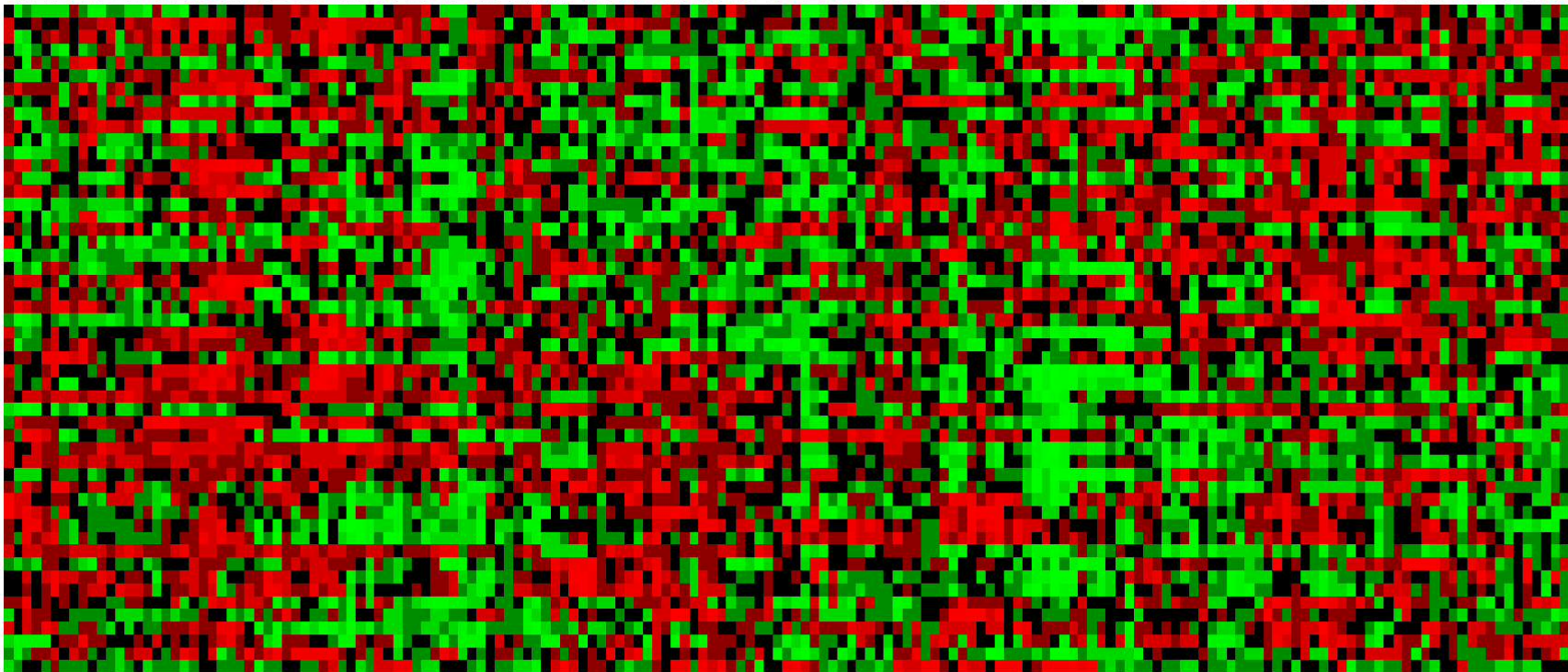
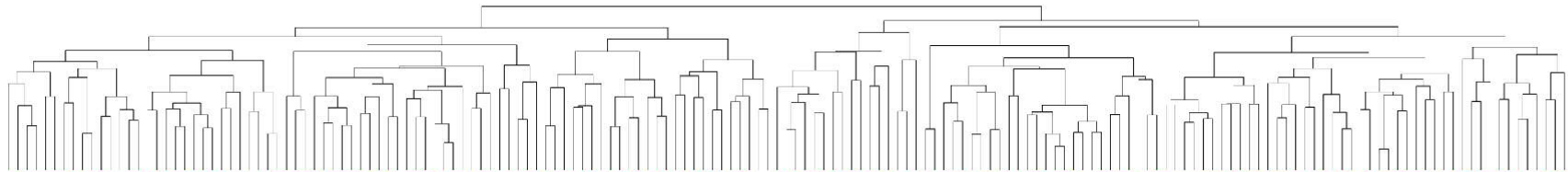


Figure S4. Hierarchical cluster of the RILs according to their volatile profile in seasons 2 and 3 together. Log_2 transformed values for each volatile are represented as a heatmap. High levels are shown in red; low levels in green; intermediate levels in black.



- Eugenol
- Methyl salicylate
- Guaiacol
- Ethyl salicylate
- Ethanol
- (E)-2-methyl-2-butenal
- 2-methylbutanol
- Butanol
- Terpineol
- Linalool
- 2-isobutylthiazole
- 3-methylbutanoic acid
- 3-methylbutanol
- 3-methylbutanenitrile
- 3-methylbutanal
- Benzylalcohol
- Benzaldehyde
- 1-nitro-2-phenylethano
- Benzylitrile
- 2-phenylethanol
- Phenylacetaldehyde
- 2-methylbutanal
- 2-methylpropanal
- Octanoic acid
- 2-ethylhexanoic acid
- Hexanoic acid
- Benzophenone
- Acetophenone
- Decanal
- Nonanal
- Octanal
- Pentanoic acid
- beta-damascenone
- Geranylacetone
- Geraniol
- 6-methyl-5-hepten-2-one
- beta-ionone
- 2-pentylfuran
- (E)-2-heptenal
- (E,E)-2,4-decadienal
- (E)-2-octenal
- 1-pentanol
- Pentanal
- 1-penten-3-one
- Acetone
- (E)-2-hexenal
- (E)-2-pentenal
- 1-penten-3-ol
- Hexanal
- (E,E)-2,4-hexadienal
- (Z)-3-hexenal
- 2-ethylfuran

001 002 003 004 005 006 007 008 009 010 011 012 013 014 015 016 017 018 019 020 021 022 023 024 025 026 027 028 029 030 031 032 033 034 035 036 037 038 039 040 041 042 043 044 045 046 047 048 049 050 051 052 053 054 055 056 057 058 059 060 061 062 063 064 065 066 067 068 069 070 071 072 073 074 075 076 077 078 079 080 081 082 083 084 085 086 087 088 089 090 091 092 093 094 095 096 097 098 099 100