

## Supplementary Information

**Table S1.** Results of ascending hierarchical clustering for nutrient treatments. N-deficient (NN) and P-deficient (NP) oligopeptide compositions were, respectively, compared to control conditions (NC). The assignment to each cluster is expressed as a percentage of treatment replicates. Different treatments are codified according to strain name, treatment applied and day of sampling (*i.e.*, 265 NC t10 corresponds to UAM265, control conditions, day 10). *n* stands for number of replicates analyzed in each case.

Strain UAM254				A			
NN vs. NC				NP vs. NC			
Treatment	<i>n</i>	Cluster A	Cluster B	Treatment	<i>n</i>	Cluster A	Cluster B
254 N t0	19	95%	5%	254 N t0	19	100%	0%
254 NC t6	20	95%	5%	254 NC t6	20	100%	0%
254 NC t10	20	100%	0%	254 NC t10	20	100%	0%
254 NC t15	20	5%	95%	254 NC t15	20	20%	80%
<b>254 NC</b>	<b>79</b>	<b>73%</b>	<b>27%</b>	<b>254 NC</b>	<b>79</b>	<b>80%</b>	<b>20%</b>
254 NN t6	20	15%	85%	254 NP t6	20	100%	0%
254 NN t10	20	5%	95%	254 NP t10	20	100%	0%
254 NN t15	20	0%	100%	254 NP t15	20	100%	0%
<b>254 NN</b>	<b>60</b>	<b>7%</b>	<b>93%</b>	<b>254 NP</b>	<b>60</b>	<b>100%</b>	<b>0%</b>

  

Strain UAM264				B			
NN vs. NC				NP vs. NC			
Treatment	<i>n</i>	Cluster A	Cluster B	Treatment	<i>n</i>	Cluster A	Cluster B
264 N t0	20	95%	5%	264 N t0	20	85%	15%
264 NC t6	20	100%	0%	264 NC t6	20	100%	0%
264 NC t10	20	100%	0%	264 NC t10	20	95%	5%
264 NC t15	20	100%	0%	264 NC t15	20	95%	5%
<b>264 NC</b>	<b>80</b>	<b>99%</b>	<b>1%</b>	<b>264 NC</b>	<b>80</b>	<b>94%</b>	<b>6%</b>
264 NN t6	20	95%	5%	264 NP t6	19	95%	5%
264 NN t10	19	84%	16%	264 NP t10	20	75%	25%
264 NN t15	20	100%	0%	264 NP t15	21	100%	0%
<b>264 NN</b>	<b>59</b>	<b>93%</b>	<b>7%</b>	<b>264 NP</b>	<b>60</b>	<b>90%</b>	<b>10%</b>

  

Strain UAM265				C			
NN vs. NC				NP vs. NC			
Treatment	<i>n</i>	Cluster A	Cluster B	Treatment	<i>n</i>	Cluster A	Cluster B
265 N t0	20	85%	15%	265 N t0	20	85%	15%
265 NC t6	20	65%	35%	265 NC t6	20	65%	35%
265 NC t10	18	50%	50%	265 NC t10	18	50%	50%
265 NC t15	20	95%	5%	265 NC t15	20	95%	5%
265 NC t20	19	42%	58%	265 NC t20	19	42%	58%
<b>265 NC</b>	<b>97</b>	<b>68%</b>	<b>32%</b>	<b>265 NC</b>	<b>97</b>	<b>68%</b>	<b>32%</b>
265 NN t6	20	25%	75%	265 NP t6	20	45%	55%
265 NN t10	20	25%	75%	265 NP t10	20	50%	50%
265 NN t15	20	15%	85%	265 NP t15	20	40%	60%
265 NN t20	20	10%	90%	265 NP t20	20	5%	95%
<b>265 NN</b>	<b>80</b>	<b>19%</b>	<b>81%</b>	<b>265 NP</b>	<b>80</b>	<b>35%</b>	<b>65%</b>

**Table S2.** Results of ascending hierarchical clustering for light intensity treatments. One-hundred fifty micro-mole photons m<sup>-2</sup> s<sup>-1</sup> (LM) and 400 µmol photons m<sup>-2</sup> s<sup>-1</sup> (LS) oligopeptide compositions were, respectively, compared to low light (LL). The assignment to each cluster is expressed as a percentage of treatment replicates. Different treatments are codified according to strain name, treatment applied and day of sampling (*i.e.*, 265 LL t10 corresponds to UAM265, low light conditions (control), day 10). *n* stands for number of replicates analyzed in each case.

<b>Strain UAM254</b>				<b>A</b>			
LM vs. LL				LH vs. LL			
Treatment	<i>n</i>	Cluster A	Cluster B	Treatment	<i>n</i>	Cluster A	Cluster B
254 L t0	20	100%	0%	254 L t0	20	100%	0%
254 LL t6	20	100%	0%	254 LL t6	20	100%	0%
254 LL t10	18	89%	11%	254 LL t10	18	94%	6%
254 LL t15	19	95%	5%	254 LL t15	19	100%	0%
254 LL t20	19	84%	16%	254 LL t20	19	95%	5%
254 LL t40	20	80%	20%	254 LL t40	20	85%	15%
<b>254 LL</b>	<b>116</b>	<b>91%</b>	<b>9%</b>	<b>254 LL</b>	<b>116</b>	<b>96%</b>	<b>4%</b>
254 LM t6	20	95%	5%	254 LH t6	20	95%	5%
254 LM t10	16	38%	63%	254 LH t10	19	79%	21%
254 LM t15	20	0%	100%	254 LH t15	20	0%	100%
254 LM t20	20	0%	100%	254 LH t20	20	0%	100%
<b>254 LM</b>	<b>76</b>	<b>33%</b>	<b>67%</b>	<b>254 LH</b>	<b>79</b>	<b>43%</b>	<b>57%</b>

  

<b>Strain UAM264</b>				<b>B</b>			
LM vs. LL				LH vs. LL			
Treatment	<i>n</i>	Cluster A	Cluster B	Treatment	<i>n</i>	Cluster A	Cluster B
264 L t0	19	79%	21%	264 L t0	19	79%	21%
264 LL t6	20	90%	10%	264 LL t6	20	90%	10%
264 LL t10	20	75%	25%	264 LL t10	20	75%	25%
264 LL t15	19	37%	63%	264 LL t15	19	37%	63%
264 LL t20	19	84%	16%	264 LL t20	19	84%	16%
264 LL t40	20	80%	20%	264 LL t40	20	80%	20%
<b>264 LL</b>	<b>117</b>	<b>73%</b>	<b>27%</b>	<b>264 LL</b>	<b>117</b>	<b>75%</b>	<b>25%</b>
264 LM t6	19	63%	37%	264 LH t6	<b>20</b>	30%	70%
264 LM t10	20	70%	30%	264 LH t10	<b>20</b>	35%	65%
264 LM t15	20	10%	90%	264 LH t15	<b>20</b>	15%	85%
264 LM t20	20	45%	55%	264 LH t20	<b>20</b>	15%	85%
<b>264 LM</b>	<b>79</b>	<b>47%</b>	<b>53%</b>	<b>264 LH</b>	<b>80</b>	<b>24%</b>	<b>76%</b>

Table S2. Cont.

Strain UAM265		C	
LM vs. LL			
Treatment	<i>n</i>	Cluster A	Cluster B
265 L t0	19	89%	11%
265 LL t6	20	60%	40%
265 LL t10	20	25%	75%
265 LL t15	20	80%	20%
265 LL t20	20	95%	5%
265 LL t40	20	35%	65%
<b>265 LL</b>	<b>119</b>	<b>65%</b>	<b>35%</b>
265 LM t6	20	70%	30%
265 LM t10	20	15%	85%
265 LM t15	20	0%	100%
265 LM t20	20	30%	70%
<b>265 LM</b>	<b>80</b>	<b>29%</b>	<b>71%</b>

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