

**Additional file 6:** Different medications and stimulation by arachidonic acid (AA), acetylsalicylic acid (ASA), and substance P (SP) of PGE<sub>2</sub>, pLT and PGD<sub>2</sub> release.

**Arachidonic acid (AA) stimulation, qualitative evaluation:**

Medication & Patient	Eicosanoid		
	PGE <sub>2</sub>	pLT	PGD <sub>2</sub>
<b>H1-RA</b>			
MCAS 7	↓	→	↓
SM 5	→	→	→
<b>H1-RA + ASA</b>			
MCAS 8	→	↓	↑
<b>H1-RA + DNCG + H2-RA</b>			
MCAS 5	↑	→	↑
SM 4	↑	↑	→
SM 3	↓	↑	→
<b>H1-RA + DNCG + H2-RA + LT-RA</b>			
SM 2	→	↑	↑
SM 6	→	→	↓
SM 1 (- DNCG)	↑	↑	↑
<b>H1-RA + DNCG + H2-RA + Ibuprofen</b>			
SM 8	↑	→	↓
<b>Prednisolone</b>			
SM 7	↑	↑	↑
SM 10	↑	→	↑

MCAS: mast cell activation disease; SM: systemic mastocytosis; H1-RA: H1-receptor antagonist; H2-RA: H2-receptor antagonist; AA: arachidonic acid; DNCG: cromoglicic acid disodium salt; LT-RA: leukotriene-receptor antagonist; ↑ : increase, ↓ : decrease, or → : no significant effect after stimulation with AA, as compared to basal release.

## Acetylsalicylic acid (ASA), qualitative evaluation:

Medication & Patient	Eicosanoid		
	PGE <sub>2</sub>	pLT	PGD <sub>2</sub>
<b>H1-RA</b>			
MCAS 7	↓	→	↓
SM 5	↓	↑	→
<b>H1-RA + ASA</b>			
MCAS 8	↑	↑	↑
<b>H1-RA + DNCG + H2-RA</b>			
MCAS 5	↓	→	↑
SM 4	↑	↑	→
SM 3	↓	↑	↑
<b>H1-RA + DNCG + H2-RA + LT-RA</b>			
SM 2	→	→	→
SM 6	→	↑	↓
SM 1 (- DNCG)	→	↑	↑
<b>H1-RA + DNCG + H2-RA + Ibuprofen</b>			
SM 8	↑	↑	↓
<b>Prednisolone</b>			
SM 7	↓	↑	↑
SM 10	↑	↑	↓

MCAS: mast cell activation disease; SM: systemic mastocytosis; H1-RA: H1-receptor antagonist; H2-RA: H2-receptor antagonist; ASA: acetylsalicylic acid; DNCG: cromoglicic acid disodium salt; LT-RA: leukotriene-receptor antagonist; ↑ : increase, ↓ : decrease, or → : no significant effect after stimulation with ASA, as compared to basal release.

### Substance P (SP), qualitative evaluation:

Medication & Patient	Eicosanoid		
	PGE <sub>2</sub>	pLT	PGD <sub>2</sub>
<b>H1-RA</b>			
MCAS 7	↓	↑	↑
SM 5	↑	↑	↑
<b>H1-RA + ASA</b>			
MCAS 8	↑	→	↓
<b>H1-RA + DNCG + H2-RA</b>			
MCAS 5	↓	↓	↓
SM 4	↑	↑	↑
SM 3	↑	↑	↑
<b>H1-RA + DNCG + H2-RA + LT-RA</b>			
SM 2	↑	→	↑
SM 6	↑	↑	↑
SM 1 (- DNCG)	↑	↓	↑
<b>H1-RA + DNCG + H2-RA + Ibuprofen</b>			
SM 8	↑	↑	↑
<b>Prednisolone</b>			
SM 7	↑	↑	↑
SM 10	↑	↑	↑

MCAS: mast cell activation disease; SM: systemic mastocytosis; H1-RA: H1-receptor antagonist; H2-RA: H2-receptor antagonist; SP: substance P; DNCG: cromoglicic acid disodium salt; LT-RA: leukotriene-receptor antagonist; ↑ : increase, ↓ : decrease, or → : no significant effect after stimulation with SP, as compared to basal release.