

110). After 24 hours the mice were anesthetized under a heavy dose of avertin (2,2,2 tribromo ethanol, Sigma, T4, 840-2) at a working concentration of 10mg/ml and injected at a dose of 0.25-0.5 mg/gram intraperitoneally. In one group the eyes were enucleated and frozen in OCT compound using isopropanol chilled by dry ice. The eyes were then processed for TUNEL labeling and quantified as described above. In the other group the retina was removed and immediately flash frozen in liquid nitrogen for RNA extraction. All eyes were stored at -80°C.

**Statistical analysis.** Values are expressed as mean  $\pm$  SEM (unless specified) and statistical analysis was performed using an unpaired Student t test (\*\*\*:  $P < 0.001$ , \*\*:  $P < 0.01$ , \*:  $P < 0.05$ , ns:  $P > 0.05$ ).

## SUPPLEMENTARY MATERIALS

Table S1. Human patient data for ELISA samples.

Fig. S1. Human samples of retinal detachment

Fig. S2. Mouse model of retinal detachment.

Fig. S3. Activation of the lectin and classical complement pathways in the mouse RD model.

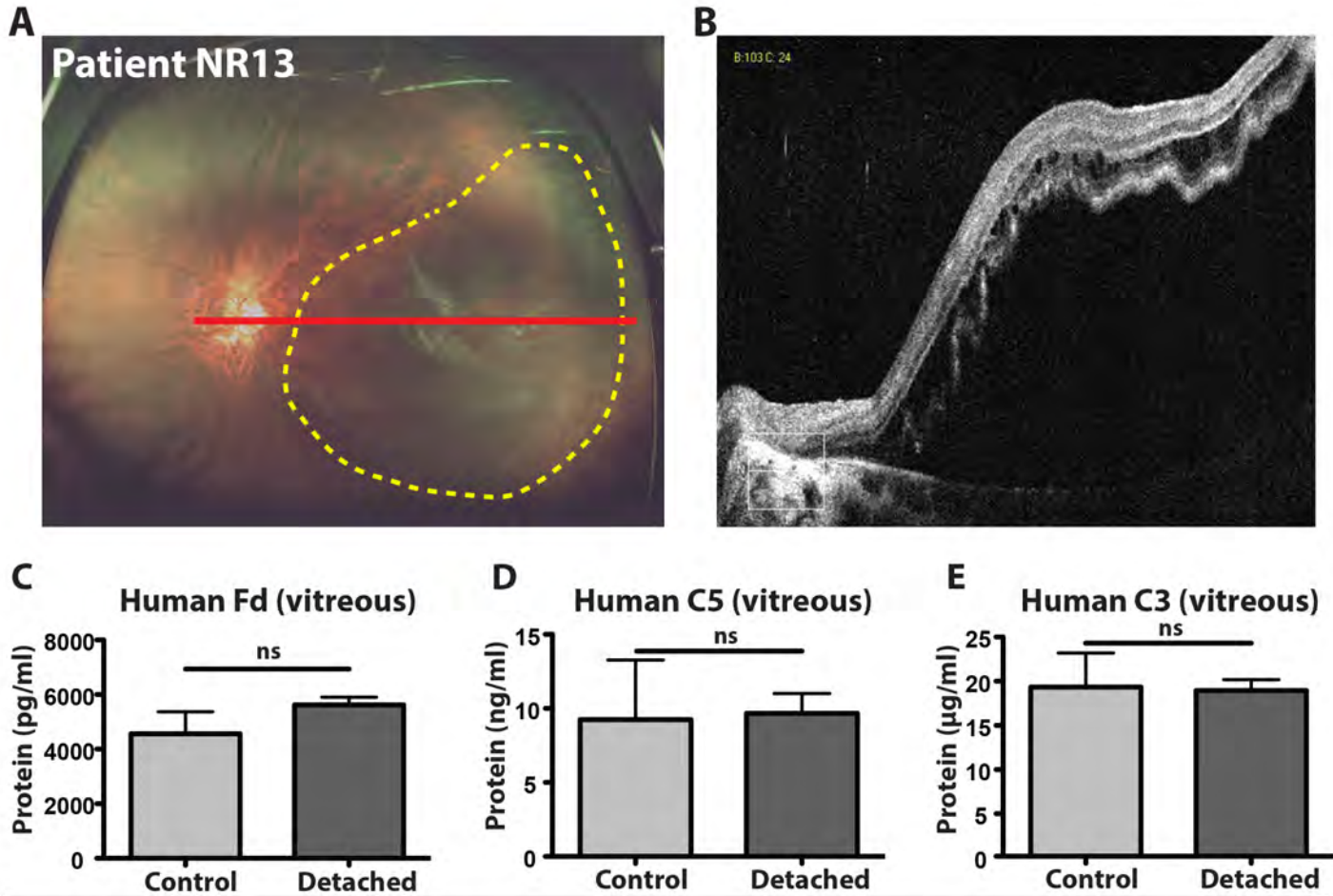
Fig. S4. Laser capture micro-dissection of the ONL.

Fig. S5. The role of the lectin and classical complement pathways in ONL cell death after retinal detachment.

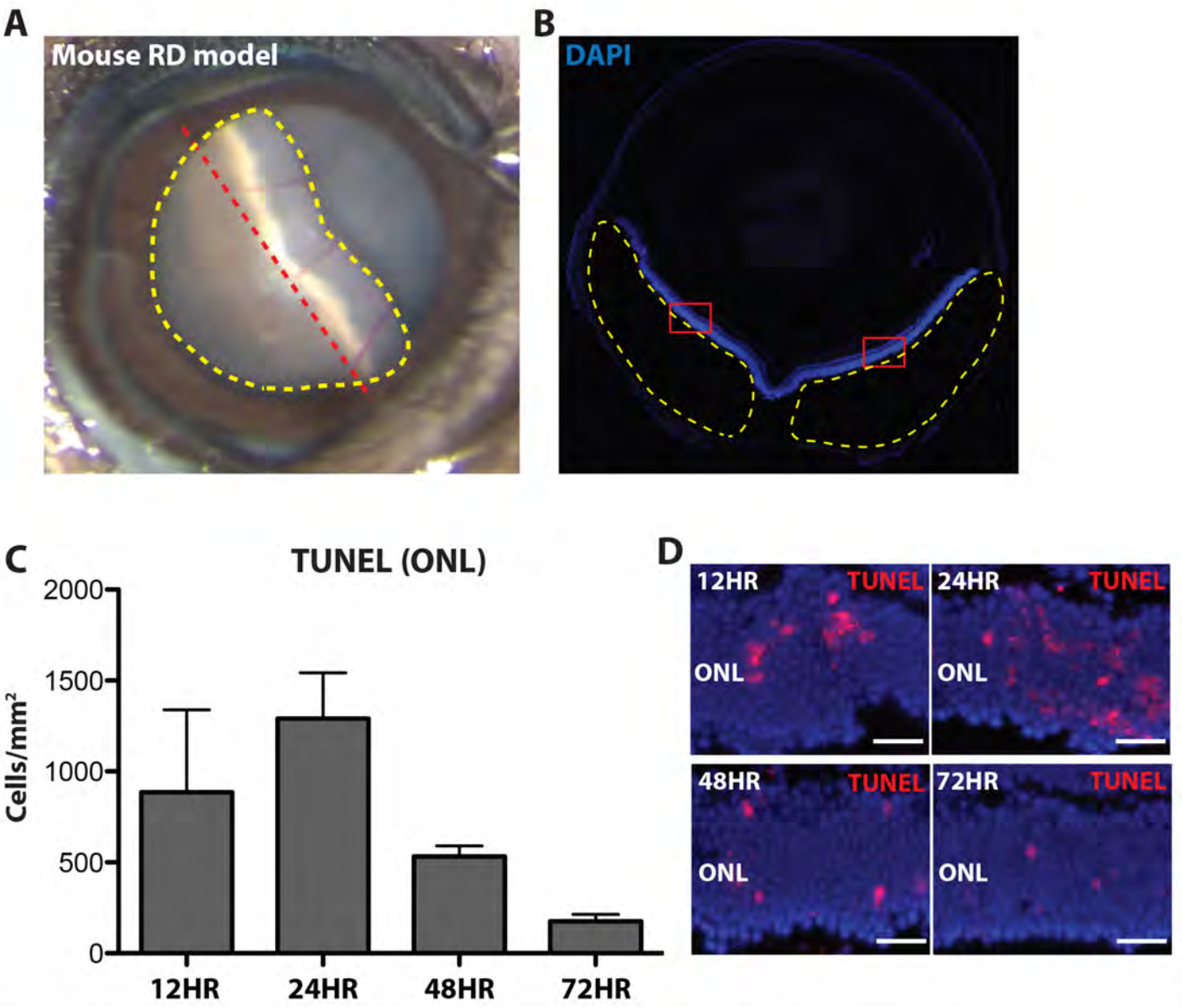
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ID number	Gender	Eye	Age	Days since onset of symptoms	Clock hours detachment	Size of hole	Systemic steroids (yes/no)	Additional patient history
NR-1	Male	OD	62	14 days	9:30 - 12:30	1 clock hour	No	Cryotherapy 14 days prior and laser therapy 9 days prior
NR-2	Male	OD	45	1 day	12:00 - 3:00	Small atrophic holes	No	Had scleral buckle and cryo OD 4.5 months prior to presentation
NR-3	Male	OD	43	2 days	9:00 - 1:00	1 clock hour at 12:00	No	Using steroid ointment non-systemic applied to foot
NR-4	Male	OD	74	3 days	9:00 - 12:30	1/2 clock hour HST with adjacent small holes	Yes Inhaled	Cataract surgery 4 years prior OD
NR-5	Male	OD	71	6 days	7:30 - 12:30	2 small round holes at 9:00	No	Pt also has non-proliferative diabetic retinopathy
NR-6	Female	OS	67	N/A	N/A	N/A	Yes Inhaled	Macular hole
NR-7	Male	OS	74	7 days	3:00 - 8:00	small hole at 6:00	No	Steroid ointment non-systemic for foot
NR-8	Male	OD	81	N/A	N/A	N/A	No	Cataract surgery OD prior epiretinal membrane OD
NR-9	Female	OD	71	N/A	N/A	N/A	No	Cataract surgery OD prior epiretinal membrane OD
NR-10	Male	OS	36	Chronic > 3 months	Mac off RD 3:00 - 6:00	No distinct retinal holes	No	Chronic retinal detachment in amblyopic eye, subretinal bands
NR-11	Female	OS	68	N/A	Macular hole	N/A	No	N/A
NR-12	Male	OS	68	4 days	Mac off RD 2:00 - 9:00	No distinct retinal holes	No	Cataract surgery 9 months prior OS
<b>NR-13</b>	<b>Male</b>	<b>OS</b>	<b>43</b>	<b>1 month</b>	<b>Mac off RD 1:00 - 5:00</b>	<b>1/2 clock hour HST located at 3:00</b>	<b>No</b>	<b>N/A</b>
NR-14	Female	OD	56	3 weeks	Mac off RD 2:00 - 9:00	Small operculated hole at 2:00	No	Cataract surgery OD 3 years prior

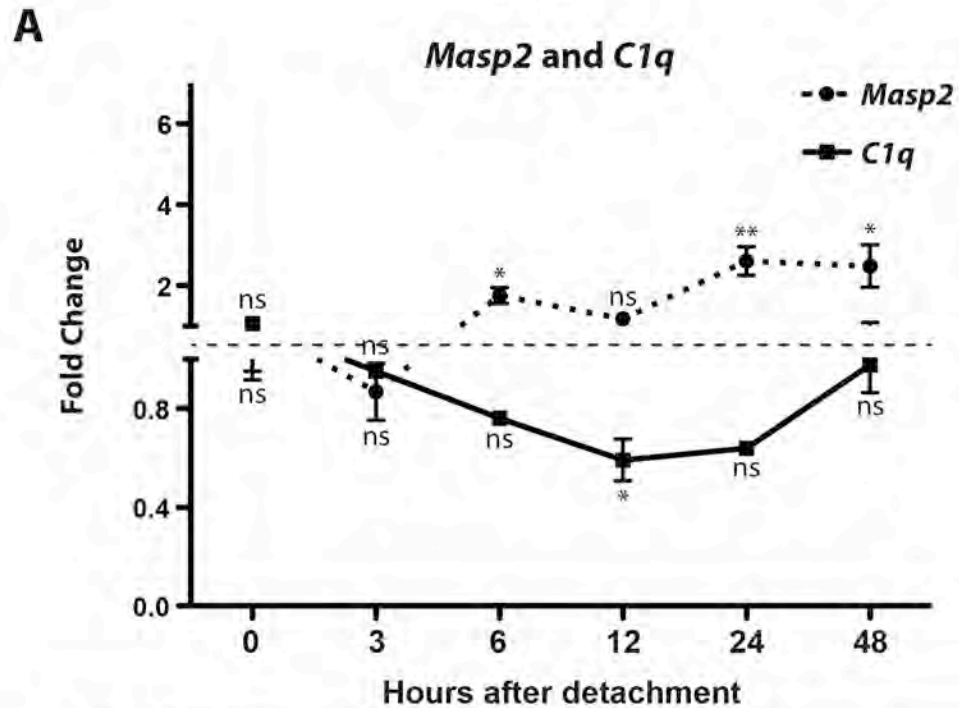
**Table S1: Human patient data for ELISA samples.** Summary of relevant patient history of the samples collected for ELISA of alternative pathway proteins. An OCT of the retinal detachment for patient NR-13, indicated in bold, is shown in fig. S1.



**Fig. S1: Human samples of retinal detachment.** (A) Retinal detachment observed in patient NR13 of supplemental table 1. The area outlined in yellow marks the area of detachment and the solid red line the plane of the OCT image shown in (B). (B) OCT taken through the detached area at the plane of the detachment marked by the solid red line in (A). (C) ELISA results of complement Factor d, (D) complement C5, and (E) C3 in the vitreous of patients with a detached retina compared to macular hole, as a non-detached control. (ns=not significant)

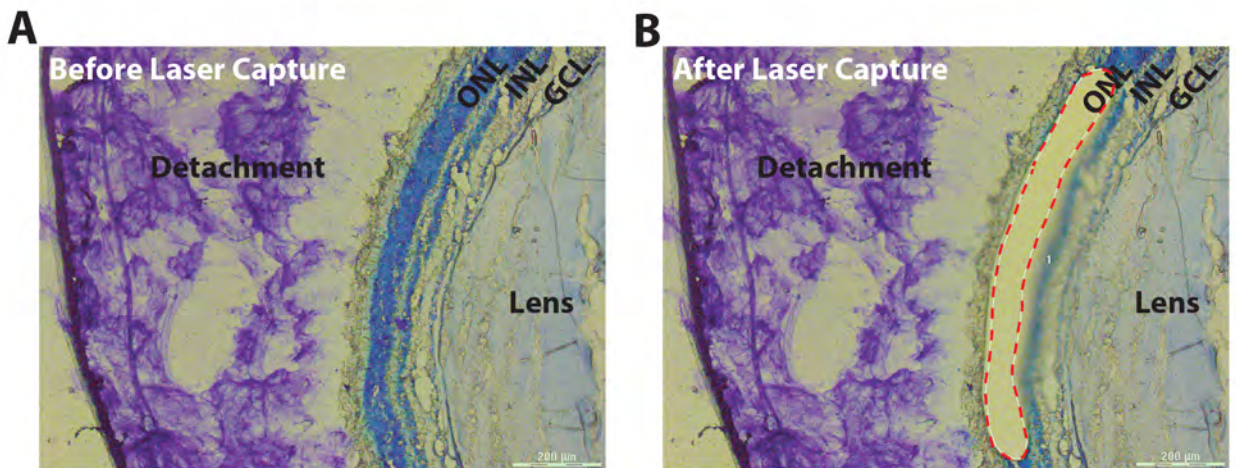


**Fig. S2: Mouse model of retinal detachment (A)** Picture illustrating the typical retinal detachment observed in mice after an injection of provisc into the sub-retinal space. The dotted yellow line is outlining the region of the retina that is detached. The dotted red line indicates the cross sectional region in (B). **(B)** Cross section of the eye (dotted red line in(A) showing the detached retina. The dotted yellow lines outline the detached portion of the retina. The red boxes indicate the regions shown in (C). **(C)** Time course of TUNEL labeling in the ONL after retinal detachment. **(D)** Quantitation of TUNEL labeling following a time course after retinal detachment. The peak of apoptosis is at 24 hours. (ONL=outer nuclear layer, scale bar=50 $\mu$ m).



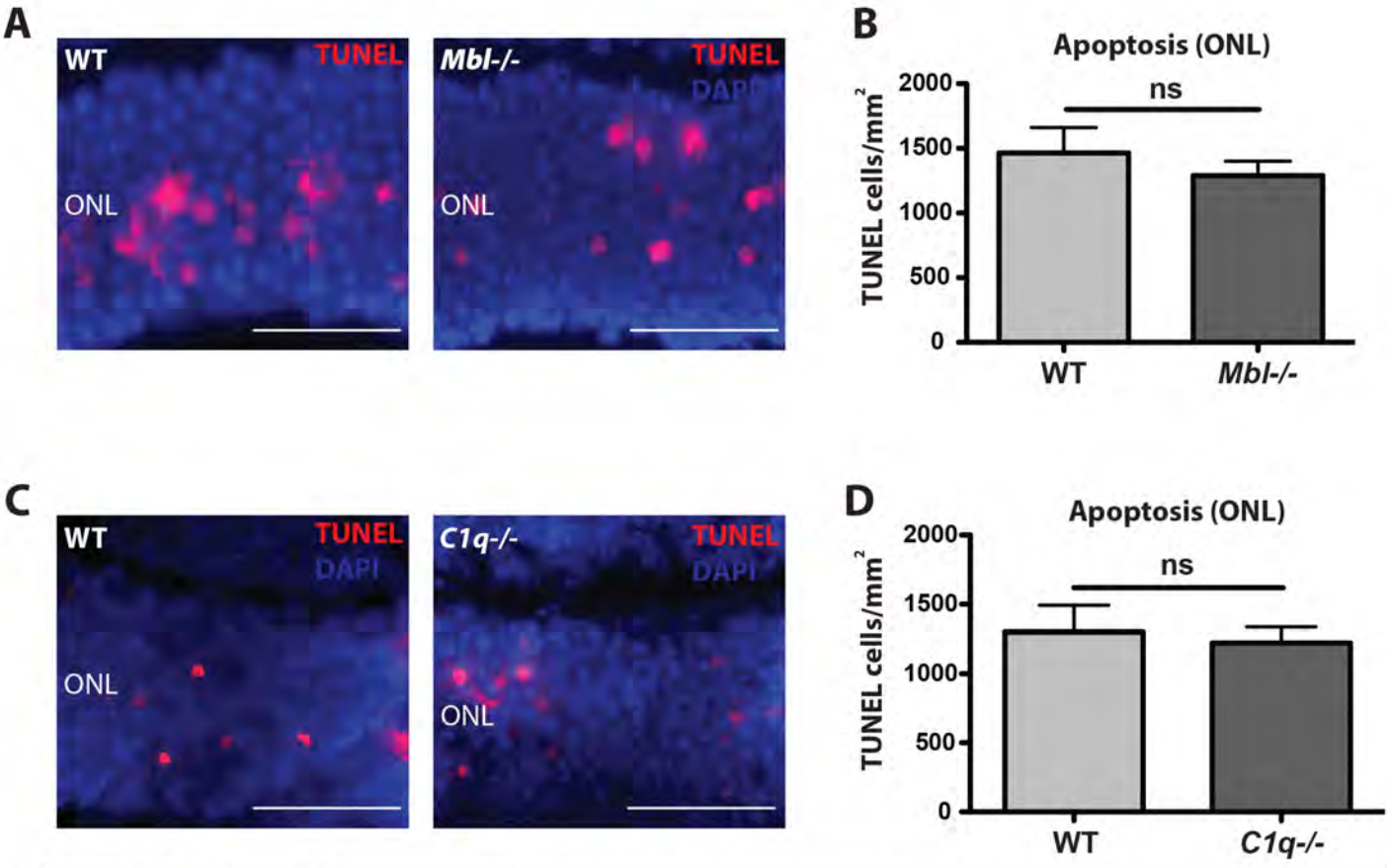
**Fig. S3: Activation of the lectin and classical complement pathways in the mouse RD model**  
**(A)** RTPCR showing a time course for *Masp2* (lectin pathway) and *C1q* (classical pathway) gene expression after retinal detachment. (ns=not significant, \* $\leq 0.05$ , \*\* $\leq 0.01$ )





**Fig. S4: Laser capture micro-dissection of the ONL**

(A) Cross section of the retina including the detached space stained with toluidine blue dye. (B) The same cross section shown in (A) after cutting out the ONL using laser capture micro-dissection, outlined in a red dotted line. (ONL=outer nuclear layer, INL=inner nuclear layer, GCL=ganglion cell layer).



**Fig. S5: The role of the lectin and classical complement pathways in ONL cell death after retinal detachment (A)** Representative TUNEL labeling 24 hours after RD in *Mbl*<sup>-/-</sup> and wild type, control, mice. **(B)** Quantitation of TUNEL positive nuclei in the ONL 24 hours after RD in *Mbl*<sup>-/-</sup> and wild type control mice. **(C)** Representative TUNEL labeling 24 hours after RD in *C1q*<sup>-/-</sup> and wild type, control, mice. **(D)** Quantitation of TUNEL positive nuclei in the ONL 24 hours after RD in *C1q*<sup>-/-</sup> and wild type control mice. (RD=retinal detachment, ONL=outer nuclear layer) (ns=not significant, \* $\leq 0.05$ , \*\* $\leq 0.01$ , scale bars=50 $\mu$ m).