

Supplementary Table S7: MLG43-ectodomains interaction energies.

Protein-glycan interaction energies							
[Molecular Mechanics (MM) with Poisson-Boltzmann (PB) and surface area (SA) solvation MM/PBSA approach]							
PRR ECD (PDB)	ΔE_{elec}^1	ΔE_{vdW}^1	ΔE_{int}^2	ΔG_{np}^3	ΔG_{pol}^4	ΔG_{sol}^5	Σ^6
CERK1 (4EBZ)	-15.9 ± 1.6	-20.5 ± 3.5	-36.45 ± 1.9	0.4 ± 0.1	33.1 ± 2.4	33.5 ± 2.5	-2.9 ± 4.4
BAK1 (4MN8.B)	-26.45 ± 1.8	-16.2 ± 4.1	-42.75 ± 5.9	0.5 ± 0.3	45.2 ± 10	45.7 ± 9.8	2.9 ± 4.0
SOBIR1 (6R1H)	-25.5 ± 3.8	-20.8 ± 3.8	-46.35 ± 7.7	0.2 ± 0.4	43.35 ± 13.2	43.5 ± 12.7	-2.85 ± 4.9

¹ ΔE_{elec} and ΔE_{vdW} energies (kcal mol⁻¹) calculated at the corresponding optimized geometries with the “NAMD energy” tool implemented in VMD 1.9.3.

² $\Delta E_{\text{int}} = \Delta E_{\text{elec}} + \Delta E_{\text{vdW}}$

³ ΔG_{np} free energies (kcal mol⁻¹) estimated from the empirical linear relation to the solvent-accessible surface area (SASA) $G_{\text{np}} = \gamma(\text{SASA}) + b$, where the parameter values depend on how the polar contribution to solvation is obtained. Values were $\gamma = 0.00526 \text{ kcal mol}^{-1} \text{ \AA}^{-2}$ and $b = 0.918 \text{ kcal mol}^{-1}$. SASA values were calculated with the SPDBV tool.

⁴ ΔG_{pol} free energies (kcal mol⁻¹) obtained by solving the Poisson-Boltzmann equation with the PBEQ Solver tool implemented in CHARMM-GUI.

⁵ $\Delta G_{\text{sol}} = \Delta G_{\text{np}} + \Delta G_{\text{pol}}$

⁶ $\Sigma = \Delta E_{\text{int}} + \Delta G_{\text{sol}}$

Energy values under 1kT (k: Boltzmann constant, T: absolute temperature) are considered irrelevant. At normal thermodynamically temperature of 298 K, noisy kT values start below 0.6 kcal/mol.