

Supplementary material

S1: Sequence of the PNTs variants

We used the N-terminus moiety of measles virus phosphoprotein (PNT) as a model IDP. Acidic and basic variants were obtained as described in [1]. Briefly, basic (H, K, R) residues from the wild type protein were substituted with acidic (E or D) in the acidic variant; while in the basic variant wild type acidic residues were almost all substituted by basic ones.

PNT wild type (N-terminus moiety of measles virus phosphoprotein)

MHHHHHHA**EE**Q**AR**H**V**K**NG**L**EC**I**R**A**L**K**AE**P**I**G**S**L**AI****EE**A**MA**A**WS****E**I**S****D**N**P**G**Q****ER**A**T**C**REEK**
AGSSGLS**K**P**CL**S**A**I**G**S**T****E**G**G**A**P****R**I**R**G**Q**G**P**G**ES****DDDA****E**T**L**G**I**P**P****R**N**L**Q**A**S**S**T**G**L**Q**C**H**Y**V****D**
HSG**E**A**V****K**G**I**Q**D**A**D**S**I**M**V**Q**S**G**L**D**G**D**S**T**L**S**G**G**D**N**E**S**E**N**S****D**V**D**I**G**E**P**D**E**G**Y**A**I**T**D**R**G**S**A**P**I**S
M**G**F**R**A**S****D**V**E**T**A****E**G**G**E**I****E**L**L**R**L**Q**S****R**G**N**N**F**P**K**L**G**K**T**L**N**V**P**P**P****D**P**G**R**A**S**T**S**G**T**P**I**K**K**E**N**L**Y
F**Q**G**S**H**M**P**G**T**M**P**G**T**M**

PNT acidic variant

MHHHHHHA**EE**Q**AD**D**V**E**NG**L**EC**I**E**A**L**D**AE**P**I**G**S**L**AI****EE**A**MA**A**WS****E**I**S****D**N**P**G**Q****ED**A**T**C**EEEE**
AGSSGLS**E**P**CL**S**A**I**G**S**T****E**G**G**A**P****D**I**D**G**Q**G**P**G**ES****DDDA****E**T**L**G**I**P**P****E**N**L**Q**A**S**S**T**G**L**Q**C**D**Y**V****D**
HSG**E**A**V****D**G**I**Q**D**A**D**S**I**M**V**Q**S**G**L**D**G**D**S**T**L**S**G**G**D**N**E**S**E**N**S****D**V**D**I**G**E**P**D**E**G**Y**A**I**T**D**E**G**S**A**P**I**S
M**G**F**D**A**S****D**V**E**T**A****E**G**G**E**I****E**L**L**E**L**Q**S****D**G**N**N**F**P**E**L**G**D**T**L**N**V**P**P**P****D**P**G**E**A**S**T**S**G**T**P**I**D**D**E**N**L**Y
F**Q**G**S**H**M**P**G**T**M**P**G**T**M**

PNT basic variant

MHHHHHHA**EE**Q**AR**H**V**K**NG**L**EC**I**R**A**L**K**AE**P**I**G**S**L**AI****KE**A**MA**A**WS****E**I**S****R**N**P**G**Q****KR**A**T**C**REEK**
AGSSGLS**K**P**CL**S**A**I**G**S**T****E**G**G**A**P****R**I**R**G**Q**G**P**G**ES****DRD**A**K**T**L**G**I**P**P****R**N**L**Q**A**S**S**T**G**L**Q**C**H**Y**V****R**
HSG**K**A**V****K**G**I**Q**D**A**R**S**I**M**V**Q**S**G**L**D**G**R**S**T**L**S**G**G**R**N**E**S**R**N**S****R**V**D**I**G****K**P**R**T**E**G**Y**A**I**T**D**R**G**S**A**P**I**S
M**G**F**R**A**S****D**V**K**T**A****E**G**G****K**I**E**L**L**R**L**Q**S****R**G**N**N**F**P**K**L**G**K**T**L**N**V**P**P**P****D**P**G**R**A**S**T**S**G**T**P**I**K**K**E**N**L**Y
F**Q**G**S**H**P**G**T**M**P**G**T**M

References

1. Tedeschi, G., Mangiagalli, M., Chmielewska, S., Lotti, M., Natalello, A. & Brocca, S. (2017) Aggregation properties of a disordered protein are tunable by pH and depend on its net charge per residue, *Biochimica et biophysica acta General subjects*. 1861, 2543-2550.

Figure S2: Correlation between charge distribution and change in solubility in a range of pH for PNTs

Correlation between the experimental solubility and net charge variation. Solid line corresponds to the fit of the data to a linear regression with a p-value < 0.05.

