

## عنوان مقاله:

Spreading Speed of Pathogen in its Host Protein-protein Interaction Network

## محل انتشار:

هشتمین همایش بیوانفورماتیک ایران (سال: 1397)

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## خلاصه مقاله:

Spreading Speed (SS) is a measure to determine the speed of spreading a pathogen in its host protein-protein interaction network (HPPIN). Number of infected host proteins by a specific pathogen protein over the number of all host proteins (HPs) make the level one of SS score called SS1. Infected HPs which infect by the initial infected HPs (level one) together with level one HPs make level two HPs and dividing the number of level two HPs over the number of all HPs of HPPIN construct SS2. In the current research we calculate three levels of SS for human proteins of human protein-protein interaction network (HPPIN) by considering human as host and virus as pathogen. By gathering Human-Virus PPIs (HVPPIN) from Intact[1], BioGrid[2], and VirusMint[3], HVPPIN with 28639 interactions belongs to 124 different virus strains with more than 5 interactions is constructed. For each of 124 virus strains, SS1, SS2, and SS3 scores has been calculated and compared with random model with the same degree distribution and same number of nodes. As a result, SS scores of real classes are considerably higher than random classes

## کلمات کلیدی:

Bipartite network analysis, Pathogen Host Protein, protein interaction, Spreading Speed

## لینک ثابت مقاله در پایگاه سیویلیکا:

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