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### محور های همایش:

آنالیز توالی های زیستی  
بیوانفورماتیک ساختاری  
زیست شناسی سامانه ای  
داده کاوی در زیست شناسی  
کشف و طراحی محاسباتی دارو  
زیست شناسی تکاملی محاسباتی  
مدل سازی ریاضی و آماری در زیست شناسی  
مطالعات محاسباتی ویروس SARS-CoV-2 و بیماری COVID - 19



## Expression of ACE2 in the Lung Tissue of Farm Animals and Human

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### Abstract:

ACE2 (angiotensin-converting enzyme-2) was reported to be one of the main receptor for SARS-CoV and is highly expressed in epithelial cells in the lung tissue. Since SARS-CoV is approximately 80 % sequence similarity with the SARS-CoV-2 it has been proposed and later approved that the ACE2 act as a receptor for SARS-CoV-2, causing COVID-19 in human. There are a lot of studies focusing on finding agents to block ACE2 or any of viral proteins to inhibit the virus entry. Expression of ACE2 might be different in lung tissue on different species in compare to human and this could be one of the reasons of COVID-19 pandemic. The objective of this study was to identify and compare the expression level of ACE2 transcript in lung tissue of cattle, sheep, chicken and human. Data was obtained from the Expression Atlas. Results showed that among all other tissues, lung had the highest level of transcript in all studied human tissues. Although in other farm animals, Kidney and liver had higher expression levels of ACE2 than lung tissue. This result could be associated with no reports of COVID-19 in farm animals, although more investigation is required to understand the spread of this virus to other animals.

**Keywords:** ACE2, Livestock, Alveolar Epithelial Cells, Bioinformatics