

I the undersigned asks to participate in the public selection, for qualifications and examinations, for the awarding of a type B fellowship at **Dipartimento di Scienze Farmaceutiche**

Scientist- in - charge: **Prof. Giulio Vistoli**

[Name and surname]

#### CURRICULUM VITAE

##### PERSONAL INFORMATION

Surname	Biswas
Name	Akash Deep
Date of birth	[02, 09, 1990]

##### PRESENT OCCUPATION

Appointment	Structure
PhD Student	Regular

##### EDUCATION AND TRAINING

Degree	Course of studies	University	year of achievement of the degree
Degree	5 years Integrated Masters of Sciences in Biosciences and Bioinformatics	Tezpur University, India	2015
PhD	Methods and Models for Molecular Sciences	Scuola Normale Superiore di Pisa, Italy	2021 (Thesis will be submitted by March/April 2021)

##### REGISTRATION IN PROFESSIONAL ASSOCIATIONS

Date of registration	Association	City
1/14/2021	Biophysical Society	Rockville, MD, USA

##### FOREIGN LANGUAGES

Languages	level of knowledge
English	C1
Italian	B2

##### AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award
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2016	Full Scholarship for PhD Methods and Models for Molecular Sciences in Scuola Normale Superiore di Pisa, Italy
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#### TRAINING OR RESEARCH ACTIVITY

description of activity
We studied the dependence of the hydration-shell density on the protein size of both antifreeze and non-antifreeze proteins and showed that the increase in the hydration-shell density, relative to the bulk, correlates with the protein size. Moreover, for the antifreeze proteins the Ice-Binding Surface (IBS) showed lower hydration density w.r.t the Non-Ice Binding Surface (NIBS). We speculate that the higher density, along with a higher hydrophilic character, of the NIBSs provides protection against the ice growth.

#### PROJECT ACTIVITY

Year	Project
2020-present	Analysis of L-DOPA and droxidopa binding to human $\beta$ 2 -adrenergic receptor
2015 - 2019	Drought tolerant protein extraction and modeling from <i>Vigna radiata</i> and its characterization
2016	Investigation into the thermo-oxidative stability and mechanical response of commercial polyimide resins and polyimide resin nano-composites for aerospace applications

#### CONGRESSES AND SEMINARS

Date	Title	Place
22-26/02/2021	65 <sup>th</sup> Biophysical Society Annual Meeting	Rockville, MD, USA (Virtual)
21-12-2020	Virtual Symposium on Chemical Theory and Computation	Rome, Italy (Virtual)
03-07-2020	SARS-CoV-2: Towards a New Era in Infection Research (EMBL Conference)	Heidelberg, Germany (Virtual)
04-12-2019	Innovative Researches in Pharmaceutical & Environment Sciences	Pisa

#### PUBLICATIONS

Length scale dependence of protein hydration-shell density A.D. Biswas, V. Barone, A. Amadei and I. Daidone, <i>Phys. Chem. Chem. Phys.</i> , 22, 7340-7347
Hydration shell of antifreeze proteins: unveiling the role of non-ice-binding surfaces L. Zanetti-Polzi, A.D. Biswas, S. Del Galdo, V. Barone and I. Daidone, <i>J. Phys. Chem. B</i> , 123, 6474-6480
Transcript expression profiling in two contrasting cultivars and molecular cloning of a SKP-1 like gene, a component of SCF-ubiquitin proteasome system from mungbean <i>Vigna radiata</i> L. N. Bharadwaj, S. Barthakur, A.D. Biswas, M.K. Das, M. Kour, A. Ramteke and N. Gogoi, <i>Sci. Rep.</i> , 9(1), 1-17
An in silico approach to understand the structure-function properties of a serine protease (Bacifrinase) from <i>Bacillus cereus</i> and experimental evidence to support the interaction of Bacifrinase with fibrinogen and thrombin B. Bora, A.D. Biswas, A.B. Gurung, A. Bhattacharjee, V.S.K. Mattaparthi and A.K. Mukherjee, <i>J. Biomol. Struct. Dyn.</i> , 35, 622-644

#### Articles in reviews

The activity of antifreeze proteins strongly correlates with the differences between the local hydration-shell properties of ice-binding and non-ice binding surfaces A.D. Biswas, V. Barone, and I. Daidone

**Congress proceedings**

Analysis of L-DOPA and Droxidopa binding to human  $\beta_2$  - adrenergic receptor A. Catte, A.D. Biswas, G. Mancini, and V. Barone (Biophysical Journal)

Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

Place and date: **Pisa, 26-02-2021**

SIGNATURE

*Akash Deep Biswas*