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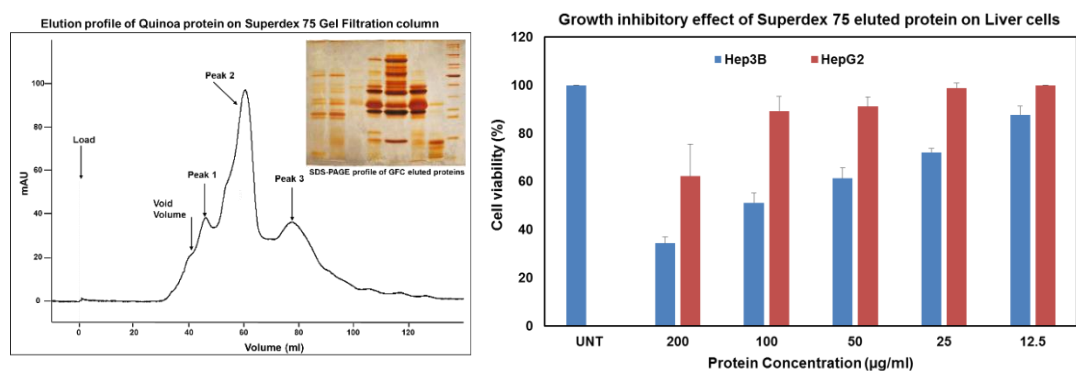


EDUCATION	MSc - Biochemistry, Karnatak University, Dharwad, 2007 Ph.D. - Biochemistry, Karnatak University, Dharwad, May 2013 Post-Doc - Indian Institute of Science, Bangalore 2013- 2014															
AREA OF EXPERTISE	Cancer biology; Functional food carbohydrates; Anti-cancer signaling pathways; Lectins and Glycobiology, Bioactive proteins															
POSITIONS HELD	<table border="1"> <thead> <tr> <th data-bbox="391 1014 727 1066">POSITION</th> <th data-bbox="727 1014 1101 1066">PERIOD</th> <th data-bbox="1101 1014 1503 1066">PLACE</th> </tr> </thead> <tbody> <tr> <td data-bbox="391 1066 727 1119">Scientist</td> <td data-bbox="727 1066 1101 1119">Feb. 2014 to till date</td> <td data-bbox="1101 1066 1503 1119">CSIR- CFTRI, Mysore</td> </tr> <tr> <td data-bbox="391 1119 727 1234">Postdoctoral Fellow</td> <td data-bbox="727 1119 1101 1234">2013 to 2014</td> <td data-bbox="1101 1119 1503 1234">Indian Institute of Science, Bangalore</td> </tr> <tr> <td data-bbox="391 1234 727 1350">Research Scholar</td> <td data-bbox="727 1234 1101 1350">Dec. 2007 to Nov. 2012</td> <td data-bbox="1101 1234 1503 1350">Karnatak University, Dharwad</td> </tr> <tr> <td data-bbox="391 1350 727 1423">Honorary Research Assistant</td> <td data-bbox="727 1350 1101 1423">June 2009 to Sept. 2009</td> <td data-bbox="1101 1350 1503 1423">University of Liverpool, UK</td> </tr> </tbody> </table>	POSITION	PERIOD	PLACE	Scientist	Feb. 2014 to till date	CSIR- CFTRI, Mysore	Postdoctoral Fellow	2013 to 2014	Indian Institute of Science, Bangalore	Research Scholar	Dec. 2007 to Nov. 2012	Karnatak University, Dharwad	Honorary Research Assistant	June 2009 to Sept. 2009	University of Liverpool, UK
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AWARDS AND HONORS	<ol style="list-style-type: none"> 1. Early Career Research award (ECR)- 2016, from DST-SERB, Govt. of India 2. Life member Society for Biological Chemist (SBC), India 3. Dr. D. S. Kothari Postdoctoral Fellow, 2013, from UGC, New Delhi 4. UGC-JRF (2008-2010) and SRF (2010-2012) 5. Honorary Research Assistant from British Council, UK under UK-India Education and Research Initiative – June to Sept. 2009 6. GATE -2007 															

CURRENT RESEARCH INTEREST

I. Understanding the dietary bioactive proteins from cereal/pseudocereal bran for their anticancer potential

Our major aim is to identify and characterize anticancer proteins from cereal and pseudocereal bran. Detailed characterization of these proteins using different biophysical techniques is being studied. Their anticancer effect observed on gastrointestinal and liver cancer cells will have greater significance for their clinical and functional food application. The detailed signaling mechanism is being studied and encouraging results obtained till now shows that dietary bioactive proteins can become an important natural molecules in controlling gastrointestinal cancer. Bran being agro waste can be utilized in a beneficial way for human health.

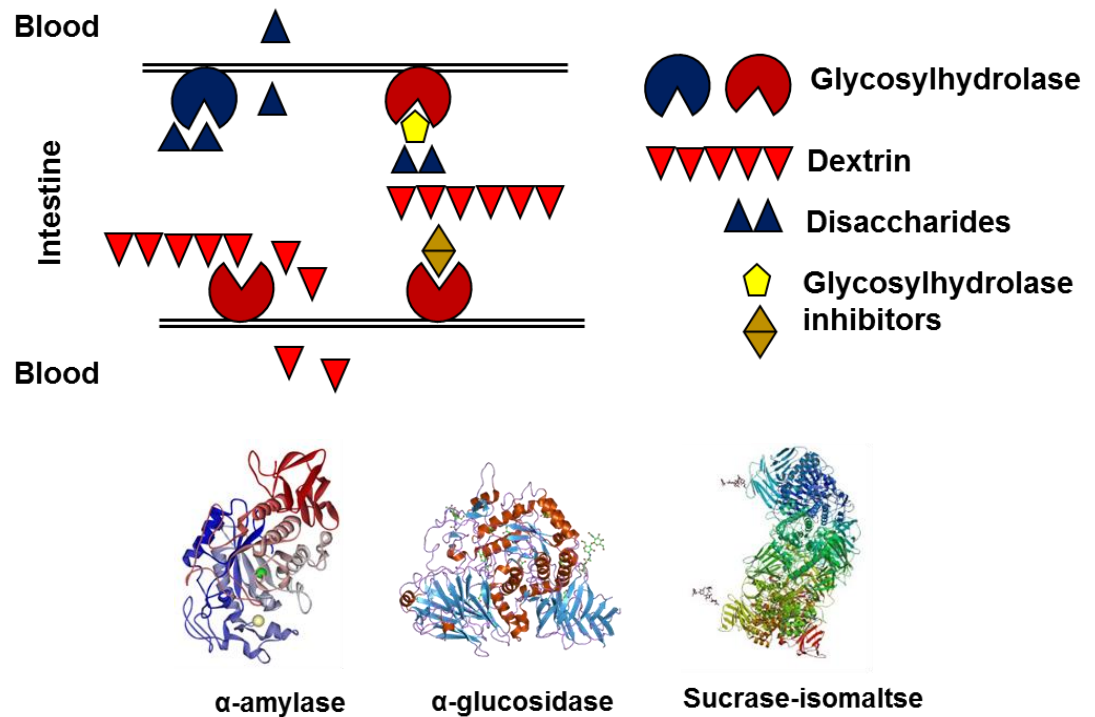


II. Natural oligosaccharides and their important biological activities

- a. Arabinoxylan polysaccharides (AX) are important natural dietary fibers known for their health benefits.

At our lab, we have isolated arabinoxylan oligosaccharides (AXOS) from these polysaccharides using specific enzymes. Our preliminary data suggested that these AXOS have the potential to inhibit glycosyl hydrolase enzyme activity. Glycosyl hydrolases in the small intestine like pancreatic α -amylase, α -glucosidase and sucrase-isomaltase are important targets in controlling postprandial blood glucose. Controlled release of postprandial glucose is an important clinical practice for type-2 diabetic patients. Hence these natural oligosaccharides will have greater significance in targeting type-2 diabetes.

We are studying the detailed inhibitory mechanism at in vitro level using human enzymes and in vivo studies using diabetic mice models. A standardized cell-based assay using intestinal epithelial cancer cells is used to confirm their multi-target approach. The detailed studies will help in utilizing AXOS for clinical application and as well as functional food applications



b. The AXOS which showed glycosyl hydrolase enzyme inhibition were explored for their anticancer potential.


The preliminary data suggested that few AXOS have growth inhibitory effect on gastrointestinal cancer cells. These important bioactivities are being studied in detail. The molecular signaling mechanism in the growth inhibitory effect, and possible binding partners on the cell surface, will be studied in detail. Purification and structural characterization of potent AXOS is being studied by different methods.

<p>PROJECTS</p>	<p>ONGOING</p> <ol style="list-style-type: none"> 1. Characterization of novel anticancer protein from quinoa bran for their application in functional food Role – Principal Investigator, Funding Agency- DST-SERB, Tenure- 2017 – 2020 2. Molecular insights of millet arabinoxylan oligosaccharides (AXOS) induced anti-cancer effect in gastrointestinal cancer Role- Principal Investigator, Funding Agency- DST-SERB, Tenure – 2016 – 2019 <p>COMPLETED</p> <ol style="list-style-type: none"> 1. Arabinoxylans (AXs) and AX derived oligosaccharides from millets as inhibitors of α-glucosidase to combat type-2 diabetes Role – Concept PI, Funding Agency- CSIR, Tenure- 2014 – 2017 								
<p>LAB MEMBERS</p>	<p style="text-align: center;">CURRENT STUDENTS</p> <hr/> <p style="text-align: center;">PhD STUDENTS</p> <hr/> <ol style="list-style-type: none"> 1. Ms. Akanksha Singh – Joined in Aug. 2015 through AcSIR and working on Characterization of Arabinoxylan oligosaccharides from millet and their anti-diabetic potential by targeting glycosyl hydrolase enzymes. 2. Ms. Anjana S. Hegde – Joined in Aug. 2017 through Integrated-PhD program and working on characterization of bioactive proteins from quinoa bran. <hr/> <p style="text-align: center;">PROJECT ASSISTANTS</p> <hr/> <ol style="list-style-type: none"> 1. Ms. Divyashree A. N. – Joined in Nov. 2016 under DST-SERB funded project. She is working on anti-cancer potential of millet arabinoxylan oligosaccharides 2. Ms. Shree Raksha S. – Joined in May 2017 under DST-SERB funded project. She is working on characterization of anticancer proteins from quinoa bran. <hr/> <p style="text-align: center;">PAST STUDENTS</p> <hr/> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center; border-bottom: 1px solid black;">Project Assistants</th> <th style="text-align: center; border-bottom: 1px solid black;">Dissertation students</th> </tr> </thead> <tbody> <tr> <td style="border-bottom: 1px solid black;">1. Mr. Sanjay S.</td> <td style="border-bottom: 1px solid black;">1. Ms. Esther Malsawmdawngliani</td> </tr> <tr> <td style="border-bottom: 1px solid black;">2. Ms. Bhavya Kotnala</td> <td style="border-bottom: 1px solid black;">2. Ms. Jeyalekshmi K.</td> </tr> <tr> <td></td> <td style="border-bottom: 1px solid black;">3. Ms. Anubhuti Gaur</td> </tr> </tbody> </table>	Project Assistants	Dissertation students	1. Mr. Sanjay S.	1. Ms. Esther Malsawmdawngliani	2. Ms. Bhavya Kotnala	2. Ms. Jeyalekshmi K.		3. Ms. Anubhuti Gaur
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PUBLICATIONS

1. Inamdar SR, **Eligar SM**, Ballal S, Belur S, Kalraiya RD, Swamy BM. Exquisite specificity of mitogenic lectin from *Cephalosporium curvulum* to core fucosylated N-glycans. **Glycoconj J.** 2016, 33(1):19-28.
2. Peppia VI, Venkat H, Kantsadi AL, Inamdar SR, Bhat GG, **Eligar SM**, Shivanand A, Chachadi VB, Satisha GJ, Swamy BM, Skamnaki VT, Zographos SE, Leonidas DD. Molecular Cloning, Carbohydrate Specificity and the Crystal Structure of Two *Sclerotium rolfsii* Lectin Variants. **Molecules.** **2015**, 20(6):10848-65.
3. Barkeer S, Gudihal R, **Eligar SM**, Hegde P, Yu LG, Swamy BM, Inamdar SR. Identification and characterization of *Sclerotium rolfsii* lectin (SRL) binding proteins from human colon epithelial cancer HT29 cells. **Translational Biomedicine** **2015**, 1-12
4. Pujari R, Kumara N, Ballal S, **Eligar SM**, Anupama S. Bhat G, Swamy BM, Inamdar SR, Shastry P. Rhizoctonia bataticola lectin (RBL) induces phenotypic and functional characteristics of macrophages in THP-1 cells and human monocytes. **Immunology Letters** **2015**, 163:163–172.
5. Savanur MA, **Eligar SM**, Pujari R, Chen C, Mahajan P, Borges A, Shastry P, Ingle A, Kalraiya RD, Swamy BM, Rhodes JM, Yu LG, Inamdar SR. *Sclerotium rolfsii* lectin induces stronger inhibition of proliferation in human breast cancer cells than normal human mammary epithelial cells by induction of cell apoptosis. **PLoS One** **2014**, 9(11): e1110107.
6. Pujari R, **Eligar SM**, Kumar N, Barkeer S, Reddy V, Swamy BM, Inamdar SR, Shastry P. *Rhizoctonia bataticola* lectin (RBL) induces caspase-8-mediated apoptosis in human T-cell leukemia cell lines. **PLoS One** **2013**, 8(11):e79311.
7. **Eligar SM**, Pujari R, Savanur MA, Nagre NN, Barkeer S, Ingle A, Kalraiya RD, Swamy BM, Shastry P, Inamdar SR. *Rhizoctonia bataticola* lectin (RBL) induces apoptosis in human ovarian cancer PA-1 cells and suppresses tumor growth *in vivo*. **J. Glycobiology** **2013**, S1: 001.
8. **Eligar SM**, Pujari R, Swamy BM, Shastry P, Inamdar SR. *Sclerotium rolfsii* lectin inhibits proliferation and induces apoptosis in human ovarian cancer cell line PA-1. **Cell proliferation** **2012**, 45(5); 397–403.
9. Pujari R, **Eligar SM**, Kumar N, Nagre NN, Inamdar SR, Swamy BM, Shastry P. CD45-mediated signaling pathway is involved in Rhizoctonia bataticola lectin (RBL)-induced proliferation and Th1/Th2 cytokine secretion in human PBMC. **Biochem. Biophys. Res. Commn.** **2012**, 419; 708–714.
10. Inamdar SR, Savanur MA, **Eligar SM**, Chachadi VB, Nagre NN, Chen C, Barclays M, Ingle A, Mahajan P, Borges A, Shastry P, Kalraiya RD, Swamy BM, Rhodes JM,

	<p>Yu LG. The TF-antigen binding lectin from <i>Sclerotium rolfii</i> inhibits growth of human colon cancer cells by inducing apoptosis <i>in vitro</i> and suppresses tumour growth <i>in vivo</i>. Glycobiology 2012, 22(9); 1227-1235.</p> <p>11. Nagre NN, Chachadi VB, Eligar SM, Shubhada C, Pujari R, Shastry P, Swamy BM, Inamdar SR. Purification and characterization of a mitogenic lectin from <i>Cephalosporium</i>, a pathogenic fungus causing mycotic keratitis. Biochemistry Research International 2010, 2010; 6</p>
<p>PAPERS PRESENTED AT CONFERENCES</p>	<ol style="list-style-type: none"> 1. Arabinoxylan oligosaccharides (AXOS) from pearl millet are the potential natural inhibitors of α-glucosidase to control type 2 diabetes. Kotnala B, Sanjay S., Singh A & Eligar SM. Poster presented at '85th Annual meeting of Society of Biological Chemists (India)' organized at CSIR-Central Food Technological Research Institute, Mysuru, India from 21 – 24th Nov. 2016. 2. Anti-cancer proteins from Quinoa bran inhibits the growth of human hepatocellular carcinoma cells Hep G2 <i>in vitro</i> Sujitha R, Malsawmdawngliani E & Eligar SM. Poster presented at '85th Annual meeting of Society of Biological Chemists (India)' organized at CSIR-Central Food Technological Research Institute, Mysuru, India from 21 - 24th Nov. 2016 3. Interaction of a core-fucose specific lectin from <i>Cephalosporium curvulum</i> (CSL) with human gastrointestinal cancer cells Eligar SM, Ballal S, Laha P, Savanur MA, Anupama S, Kalraiya RD, Swamy BM, Inamdar SR. Poster presented at '33rd Annual Convention of Indian Association for Cancer Research' an international conference organized at Rajiv Gandhi Centre for Biotechnology, Kollam, India from 12-15th Feb. 2014 4. Exquisite specificity of <i>Cephalosporium curvulum</i> lectin to core fucosylated N-glycans and its possible potential in cancer diagnostics. Eligar SM, Ballal S, Swamy BM, Inamdar SR. Oral presentation in a National conference on 'Glycobiology of Cancer; Lectins as Tools and Targets' held at Karnatak University, Dharwad, India from 7th - 9th Nov. 2013. 5. Identification of SRL binding receptors on human colon cancer cells using microfluidic based LC system with an advanced Q-TOF-MS. Gudihal R, Eligar SM, Barkeer S, Rhodes JM, Yu LG, Swamy BM, Inamdar SR. Poster presented at '61st ASMS Conference on Mass Spectrometry and Allied Topics' held at Minneapolis, MN, USA from 9-13th June 2013. 6. <i>Rhizoctonia bataticola</i> lectin (RBL) induces apoptosis in human ovarian cancer PA-1 cells and suppresses tumor growth <i>in vivo</i>. Eligar SM, Pujari R, Savanur MA, Nagre NN, Barkeer S, Reddy HV, Rajiv D. Kalraiya RD, Swamy BM, Shastry P Inamdar SR.

	<p>Poster presented at '32nd Annual Convention of Indian Association for Cancer Research' an international conference organized at University of Delhi, India from 13-16th Feb. 2013.</p> <p>7. Apoptotic effect of TF antigen binding lectin from <i>Sclerotium rolfsii</i> on human ovarian cancer cells. Eligar SM, Pujari R, Swamy BM, Shastry P Inamdar SR. Poster presented at 'Participating Investigators Meeting' held at NIH - Bethesda, Maryland, USA from 27-29th July 2011.</p> <p>8. The TF-antigen binding lectin from <i>Sclerotium rolfsii</i> inhibits tumour cell growth by induction of apoptosis in HT29 cells. Inamdar SR, Savanur MA, Eligar SM, Chachadi VB, Nagre NN, Chen C, Barclays M, Ingle A, Mahajan P, Borges A, Shastry P, Kalraiya RD, Swamy BM, Rhodes JM, Yu LG. Poster presented at the 'Annual meeting of Society for Glycobiology' held at Seattle USA, in Nov. 2011.</p>
<p>FUNDING SOURCES</p>	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Council of Scientific and Industrial Research- Central Food Technological Research Institute, Mysore, India</p> </div> <div style="text-align: center;">  <p>CSIR INDIA</p> </div> <div style="text-align: center;">  <p>सत्यमेव जयते</p> </div> <div style="text-align: center;">  <p>Science and Engineering Research Board (SERB) Department of Science and Technology (DST), Govt. of India</p> </div> </div>
<ul style="list-style-type: none"> • Students who are interested in joining our lab for PhD with national level fellowship may contact with their brief CV. • Students willing to submit their application for a postdoc with good research experience may contact with their detailed CV. 	