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Specialization
 Clinical research, Polycystic Ovarian Disease

Project Title
 To investigate the clinical spectrum, health trajectories, incidence and risk factors of Post Acute Sequelae of COVID-19 in a multicentric cohort study at Delhi University

Executive Project Summary
 The study adopted a two-stage approach to investigate the determinants and biological basis of persistent post-COVID-19 symptom burden. In the epidemiological phase, a structured questionnaire was designed, reviewed, edited, and validated using Cronbach's test before being administered to 3,123 participants. Of these, 2,997 individuals consented to participate in the study. Overall, 73.42% of participants reported a lower Post-COVID-19 symptom burden, whereas 26.60% experienced a higher symptom burden. Increased symptom burden was significantly associated with female sex, younger age, BMI, family history of disease, lifestyle factors, vaccination status, and dyspnea severity. Logistic regression analysis identified weight gain (OR = 5.52), post-vaccination status (OR = 3.82), abnormal ECG findings (OR = 1.71), and dyspnea severity (OR = 1.34) as significant predictors of higher symptom burden.
 To explore the biological mechanisms underlying these epidemiological findings, a subsequent wet-lab investigation was performed in a cohort of 105 participants. Nutritional history was documented for all participants. Among them, 55.1% were symptomatic, while 41.9% were asymptomatic. Notably, over 40% of symptomatic individuals belonged to the younger age group (18-30 years), and Post-COVID-19 symptoms were distributed equally between males and females. Mann-Whitney U test analysis revealed significantly lower glutathione (GSH) levels (P=0.024) and higher MDA: GSH ratios (P=0.011) among symptomatic individuals, along with a trend toward elevated SGP levels, suggesting a role for oxidative stress and hepatic dysfunction in persistent multisystem symptomatology. Lactate dehydrogenase (LDH) levels showed significant correlations with several post-COVID symptoms, indicating a potential contribution of organ/tissue injury. Furthermore, hs-CRP and IL-6 exhibited a strong positive correlation (P= 0.004, P < 0.001), supporting the presence of persistent low-grade inflammation. Collectively, these findings indicate that oxidative stress, chronic inflammation, tissue injury, and metabolic dysregulation are key contributors to the persistence and severity of Post-COVID symptoms.

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Specialization
 Heterocyclic Chemistry, Carbohydrate Research, Epidemiology, Cancer biology

Project Title
 Design and Synthesis of Novel Coumarin-pyridine quinoline hybrids as Angiogenesis Inhibitors Targeting VEGFR-2 TKD against Tumor Microenvironment

Executive Project Summary
 The aim of the present study was to design and evaluate novel coumarin-pyridine and coumarin-quinoline hybrid analogs as antiangiogenic agents. Accordingly, a library of thirty novel molecules was synthesized via a multistep synthesis approach and structurally characterized using complete spectroscopic analysis, ¹H, ¹³C NMR and HRMS. The compounds were evaluated for their pharmacokinetic, toxicological, and antiangiogenic activities against VEGFR-2 TKD, a site for tyrosine residue phosphorylation and further progression of angiogenesis, using in silico and in vitro experimental studies. All 30 compounds showed drug-likeness and favorable ADMET properties via in silico tools, SwissADME and ADMETLab 3.0. Molecular docking of the novel coumarin hybrids with VEGFR-2 TKD (PDB ID 6GQQ) at the ATP binding site using AutoDock MGL Tools 1.5.6 resulted in all compounds exhibiting greater binding affinity (-11.45 to -9.28 kcal/mol) than ATP (-3.11 kcal/mol) and reference drug Axitinib, except for compound D-5 (+2.09 kcal/mol), indicating the synthesized compounds as potential antiangiogenic agents. Compounds with the best binding scores, i.e., C-12 (-11.41 kcal/mol) and D-10 (-11.53 kcal/mol), were determined as lead compounds and will be validated for their antiangiogenic activity by in vitro study using angiogenesis model HUVEC. Additionally, cytotoxic activity against cancer cells will be performed for dual targeting.

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CSIR ASPIRE-SHAKTI
 Celebrating Women Researchers in STEM

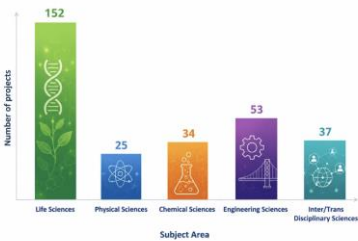


वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद, भारत
 Council of Scientific & Industrial Research, India
 नई दिल्ली / New Delhi
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CSIR-A Special Call for Research Grants for Women Scientists (CSIR ASPIRE-SHAKTI)

Aligned to the Government of India's initiative to empower women and promote 'Nari Shakti' in the country, CSIR has for the first time announced A Special Call for Research Grants for Women Scientists (CSIR-ASPIRE) in the year 2023. This initiative supports women researchers across India in Life Sciences, Chemical Sciences, Physical Sciences, Engineering Sciences, and interdisciplinary fields. The grant covers funding for research staff (JRF/SRF/RA), minor equipment, and contingency expenses, with a budget limit of ₹25-30 lakh per project. The CSIR Human Resource Development Group is overseeing the entire scheme end to end.

Total Number of ASPIRE Projects – 301 Nos.



Subject Area	Number of projects
Life Sciences	152
Physical Sciences	25
Chemical Sciences	34
Engineering Sciences	53
Inter/Transdisciplinary Sciences	37

Daulat Ram College is proud to announce that Dr. Jyoti Taneja and Dr. Meenakshi Thakur have been selected as distinguished women researchers in the Life Sciences category under the prestigious CSIR ASPIRE-SHAKTI Scheme.

In the first batch of the CSIR ASPIRE Scheme, 301 research projects were selected across India. Of these, only 152 projects were awarded under the Life Sciences category of the CSIR ASPIRE-SHAKTI initiative, which exclusively supports outstanding women researchers.

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