

# Alka Choudhary

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## Professional Profile

A professional analytical chemist having experience in working in international accredited laboratories and Universities, developing and validating methods (LC and GC and with MS and MS/MS), analysing complex matrix such as plants, seaweeds, bacteria and marine organisms with excellent laboratory competences.

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## Research Interests

- Structural characterization
- Analytical method development and validation

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## Scientific Expertise

- *Chromatographic techniques:* HPLC/UPLC/Nano-HPLC (Shimadzu-LC-Solutions, Waters-EmPower, Agilent-Chemstation) and HPTLC (Camnag-WinCATS)
- *Hyphenated techniques:* LC-MS (QToF) and MS/MS (waters Masslynx)
- *Structure elucidation:* based on UV, FT-IR, MS and NMR (2-D NMR: COSY, NOESY, HSQC, HMBC)
- *Technical skills:* MS Office, ChemDraw, Endnote.
- *Literature retrieval:* Sciencedirect, Pubmed, Scifinder and Google scholar

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## Education

**[2011-2016] National Institute of Pharmaceutical Education and Research, S.A.S. Nagar**

- Doctorate of Philosophy
- *Thesis Title:* Phytochemical investigation of *Potentilla fulgens* and *Rhodiola imbricata* for selected biological activities
- *Supervisor:* Dr. Inder Pal Singh, Professor, NIPER S.A.S. Nagar
- CGPA- 9.83/10 (79.1 %)

**[2009-2011] National Institute of Pharmaceutical Education and Research, S.A.S. Nagar**

- Master of Science (Pharm.) in Natural Products
- *Thesis Title:* Semi-synthesis of gossypol derivatives and their evaluation for anti-leishmanial activity
- *Supervisor:* Prof. K.K. Bhutani
- CGPA- 9.76/10 (78.8%)

**[2005-2009] Guru Nanak Dev University, Amritsar**

- Bachelor of Pharmacy
- Aggregate - 78.63%

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## Research experience

**[Nov 2016 - Mar 2018] Post-doctoral Fellow, Teagasc Food Research Centre, Dublin, Ireland**

*Project:* HPLC-ESI-Q-ToF-MS/MS based characterization of bioactive metabolites from Marine bacteria

[Aug 2016 - Oct 2016] **Post-doctoral Fellow**, Institute of Nano-Science and Technology, Mohali, India

[Sep 2015 - Feb 2016] **Research Associate**, AS&EC Division, ICAR-CIPHET

Project: 'Development of food biopolymer based micro and nano scale delivery system for bioactive ingredients in functional food'

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### Publications

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#### Post-doctoral work

1. **Alka Choudhary**, Lynn M. Naughton, Montánchez I., Alan D.W. Dobson, Dilip K. Rai. Current Status and Future Prospects of Marine Natural Products (MNPs) as Antimicrobials. *Marine Drugs* **2017**, *15*, 272-313.
2. Zhihang Zhang, Mahesha M. Poojary, **Alka Choudhary**, Dilip Rai and Brijesh K Tiwari. Comparison of selected clean and green extraction technologies for biomolecules from apple pomace. *Electrophoresis* (Accepted).
3. Daniel Rico, Ana Belén Martín, Iñaki Milton, Alfredo Fernández-Quintela, Silvan J. M., Dilip K. Rai, **Alka Choudhary**, Daniel Antonio de Luis, Cristina Martínez, Elena Peñas. Characterization and in vitro evaluation of seaweed species as potential functional ingredients to ameliorate metabolic syndrome. *Journal of Functional Foods* **2018**, *46*, 185-194.

#### PhD work

4. **Alka Choudhary**, Amit Kumar Mittal, Manukonda Radhika, Debabrata Tripathy, Anupam Chatterjee, Uttam Chand Banerjee, Inder Pal Singh. Two new stereoisomeric antioxidant triterpenes from *Potentilla fulgens*. *Fitoterapia* **2013**, *91*, 290 -297.
  5. **Alka Choudhary**, Radhika Manukonda, Anupam Chatterjee, Uttam Chand Banerjee and Inder Pal Singh. Qualitative and quantitative analysis of *Potentilla fulgens* roots by NMR, Matrix-assisted Laser Desorption/Ionisation with Time-of-Flight MS, Electrospray Ionisation MS/MS and HPLC/UV. *Phytochemical Analysis* **2015**, *26*, 161-170.
  6. **Alka Choudhary**, Raj Kumar, Ravi Bihari Srivastava, Sunil Kumar Surapaneni, Kulbhushan Tikoo, and Inder Pal Singh, Isolation and characterization of phenolic compounds from *Rhodiola imbricata*, a Trans-Himalyan food crop having antioxidant and anticancer potential. *Journal of Functional Foods*, **2015**, *16*, 183-193.
  7. Inder Pal Singh and **Alka Choudhary**. Piperine: trends in structure activity relationships. *Current Topics in Medicinal Chemistry*. *Current Topics in Medicinal chemistry* **2015**, *15*, 1722-1734
  8. Amit Mittal, Debabrata tripathy, **Alka Choudhary**, Pavan kumar, Anupam chatterjee, Inder pal Singh and Uttam chand Banerjee. Bio-synthesis of silver nanoparticles using *Potentilla fulgens* ex wall. hook and therapeutic evaluation as anticancer and antimicrobial agents. *Materials Science and Engineering C* **2015**, *53*, 120-127.
  9. Jasmeen Sidanaa, Dinesh Neeradi, **Alka Choudhary**, Sushma Singh, William Foley, Inder Pal Singh. Antileishmanial polyphenols from *Corymbia maculata*. *Journal of Chemical Sciences* **2013**, *125*, 765-775
  10. Isha Saraf, **Alka Choudhary**, Ram Jee Sharma, Karthik Dandi, Karen J. Marsh, William J. Foley and Inder Pal Singh, Extraction of pinocembrin from different species of Eucalyptus leaves and its quantitative analysis by qNMR and HPTLC. *Natural products Communications* **2015**, *10*, 379-382.
  11. [Karen J. Marsh](#), [Baofa Yin](#), [Inder Pal Singh](#), [Isha Saraf](#), **Alka Choudhary**, [Jessie Au](#), [David J. Tucker](#), [William J. Foley](#). From Leaf Metabolome to In Vivo Testing: Identifying Antifeedant Compounds for Ecological Studies of Marsupial Diets. *Journal of Chemical Ecology* **2015**, *41*, 513-519
  12. Debabrata Tripathy, **Alka Choudhary**, Uttam Chand Banerjee, Inder Pal Singh, Anupam Chatterjee. Induction of apoptosis and reduction of endogenous glutathione level by the ethyl-acetate soluble fraction of the
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methanol extract of the roots of *Potentilla fulgens* in cancer cells. *Plos one* **2015**, 10, e0135890.

13. **Alka Choudhary**, Ram Jee Sharma and Inder Pal Singh. Quantitative Analysis of Major Sesquiterpene Lactones in essential oil of *Inula racemosa* and *Saussurea lappa* Using qNMR. Journal of essential oil bearing plants **2016**, 19, 20-31.

14. **Alka Choudhary**, Umesh Bihade, Amit Kumar Mittal, Anupam Chatterjee, Uttam Chand Banerjee, Inder Pal Singh. Anticariogenic potential of *Potentilla fulgens* extract and its chemical constituents. International Journal of Phytomedicine **2017**, 9, 83-91

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#### Conference Presentations

- Poster presentation at 54<sup>th</sup> meeting of PSNA at University of Illinois at Urbana-Champaign, USA, **2015**. Isolation of new phenolics with anticancer and antioxidant potential from roots of *Rhodiola imbricata* and their quantification by validated HPLC method.
  - Poster presentation at DDNP-TM-2014. Qualitative and quantitative analysis of *Potentilla fulgens* and anticariogenic activity of its polyphenols.
  - Poster presentation at MEDCHEM-**2013**, October, IITM-Chennai. Phytochemical investigations on *Potentilla fulgens* for potential anticancer molecules.
  - Poster presentation at INDOUSWGC-**2012**, March, Dehradun. Two new glycosides from *Burkholderia gladioli* OR-1.
  - Poster presentation at DDNP-TM-**2012** International Conference on New Development in Drug Discovery from Natural Products and Traditional Medicines November, NIPER, S.A.S. Nagar. qNMR: a valuable tool for standardization.
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#### Scholastic Achievements

- **Travel Award** (USD 200) at PSNA Conference at University of Illinois at Urbana-Champaign, USA [2015]
  - DBT International Travel Grant [2015]
  - DST International Travel Support [2015]
  - **Best Poster Award** in DDNPTM-2014, NIPER SAS Nagar [2014]
  - **DST- INSPIRE Fellowship** by Department of Science & Technology [2012]
  - **Innocentive Challenge Award** for solving Challenge entitled *Novel Sources for Extraction of Xanthophylls* (Challenge ID 9932799) worth prize USD 7000 [2011]
  - Qualified **GATE-2009** (Pharmaceutical Sciences) by IIT, Madras percentile of 98.91 [2009]
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#### Personal Details

- Date of Birth : 12 January, 1988
  - Marital status: Married
  - Languages Known: English, Hindi and Punjabi
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#### References

- Prof. Inder Pal Singh, Professor, NIPER Mohali, India. Email: ipsingh@niper.ac.in
- Prof. Sanjay Jachak, Professor, NIPER Mohali, India. Email: sanjayjachak@niper.ac.in
- Dr. Dilip Rai, Senior Research Officer, Teagasc, Ashtown, Dublin, Ireland. Email: Dilip.Rai@teagasc.ie