Hardip Kalsi

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# Professional Profile

**Biochemist / Chemist / Formulation Scientist**

Highly respected chemist and formulation scientist with expertise and laboratory management consulting experience related to formulations, product development, regulatory affairs, and R&D support and management.

Strong organizational and project management skills, coupled with sharp analytical and trouble-shooting skills, accentuate ability to clearly identify and resolve complex issues and challenges, resulting in streamlined processes, cycle time improvement, increased efficiencies, improved product development, and measurable cost savings.

An excellent combination of interpersonal and communication skills, verbal and written, underscore ability to make presentations and write reports and technical papers that are clear, concise and easily understood by all stakeholders.

Visionary, entrepreneurial spirit adeptly skilled at designing, developing, managing, and scaling laboratories to meet market demands, new product development, organizational mission and objectives, and support profit margins.

Multi-lingual: fluent in English, French, Swahili, Punjabi, and Hindi.

# Professional Experience

**TBL Cosmetics Inc. –** *Santa Cruz, California* **2015 – Present**

## Chief Science Officer & Co-founder, Member of the Board

* Cofounded enterprising contract firm focused on providing professional expertise and laboratory management consulting related to formulations (emphasis on skincare formulations), product development, regulatory affairs, and R&D support and management. Launched the following brands: *(a partial listing):*

**1212 Gateway Skincare –** *Santa Cruz, California* **2015 – Present**

## Chief Science Officer, Co-founder, Member of the Board

* Successfully formulated and co-launched premium skincare line grossing $6M in sales within one year, currently sold DTC and on Amazon.com.
* Conducted formulation work, stability study testing, and evaluated final 3rd party testing as CSO for all formulations launched to date.
* Ably developed lab safety and testing regulations, trained personnel on processes and proper documentation, and prepared time and data sensitive reports, charts, graphs, and other documents for board presentations.
* 1212gateway.com for your reference

**KALSI SCIENTIFIC LLC –** *Santa Cruz, California* **2015 – Present**

## Principal & Entrepreneur

* Founded enterprising contract firm focused on providing professional expertise and laboratory management consulting related to formulations (emphasis on skincare and cannabinoid-based formulations), product development, regulatory affairs, and R&D support and management. Launched the following brand:

**CREAM OF THE CROP –** *Santa Cruz, California* **2018 – Present**

## Founder & Principal

* Successfully launched startup farm-to-skin boutique skincare line of products and whole plant medicine for discriminating consumers seeking simpler ingredients and a brand that’s innovative and delivers on its promises, with locally sourced plant-based extracts, as well as goat milk extract.
* Currently sold in select boutiques in the Bay Area.
* Developed popular, effective skincare brand products that are trustworthy, reliable and provide consistent efficacy.

**GOLDEN STATE LABS –** *Santa Cruz, California* **2017 – 2019**

## Contract Chemist/Formulation Scientist

* Led method development and implementation for new product, including formulation of novel new consumer product line in the industry and presented business venture proposals to prospective venture capitalists.
* Initiated establishment of cross-transfer and implementation of laboratory standards in a thriving new industry.
* Keenly reviewed and oversaw potency, residual solvent, pesticide residue, and microbial profile testing for raw and finished goods.
* Optimized current technology through data mining, laboratory partnerships and correlations; and conducted metric analyses to optimize yields and technical efficiency.
* Took charge of expansion and improvement of post-processing and laboratory facilities, including new lab equipment to meet local and state standards.
* Developed, implemented and managed new post-processing and packaging techniques that effectively improved cost and efficiency.
* Ably developed lab safety and testing regulations, trained personnel on processes and proper documentation, and prepared time and data sensitive reports, charts, graphs, and other documents for board presentations.

**Rilla Relief –** *California, Ghana* **2016 – 2017**

## Contract Chemist/Formulation Scientist

* Adeptly led R&D in method development, optimization and implementation for new product roles; worked with reputable labs to ensure accuracy in testing and reporting; and utilized metric analyses to optimize yields and technical efficiency.
* Expanded and improved post-processing and lab facilities and implemented and managed new post-processing and packaging techniques to improve cost and efficiency.
* Troubleshot product chemistry for pipeline and finished goods; and conducted reviews on potency, residual solvent, pesticide residue, and microbial profile testing for raw and finished goods.
* Produced cross-transfer and implementation of laboratory standards in a thriving novel industry.
* Assisted drafting of foreseeable laboratory safety and testing regulations as per current industrial standards.
* Aptly prepared time and data sensitive reports, charts, graphs, and other documents for board presentations.
* GHS compliancy of safety data sheets - maintaining a current version of data sheets per industry standards.

**Freedom Enterprises –** *Scotts Valley, CA* **2015 – 2016**

## Contract Chemist/Chief Scientist

* Performed laboratory management consulting for formulations, product development, regulatory affairs, and R&D support and collaboration, including managing five laboratory and post-processing staff.
* Expertly formulated award-winning medicinal product within six months of project initiation.
* Effectively led R&D in method development and optimization roles and managed physical chemistry and quality testing for product release.
* Charged with keenly reviewing and overseeing potency residual solvent, pesticide residue, and microbial profile testing for raw and finished goods, and troubleshooting product chemistry for pipeline and finished goods.
* Aptly performed cross-transfer and implementation of pharmaceutical laboratory standards and led method development and implementation for new product in an expanding, innovative industry.
* Led expansion of post-processing and laboratory facilities; assessed and obtained laboratory equipment needs; produced and reviewed all lab documents; and trained personnel on relevant business processes.
* Drafted laboratory safety and testing regulations in accordance with pharmaceutical standards.
* Collaborated with stakeholders to develop mutually beneficial partnerships; worked only with reputable labs to ensure unbiased testing and reporting; and efficiently implemented new laboratory and some manufacturing processes by fostering effective interdepartmental and cross-functional partnerships as products evolved.
* Made effective board presentations, including producing time and data sensitive reports, charts, graphs, etc. in support of achieving corporate goals and department objectives.
* Ensured GHS compliancy of safety data sheets per industry standards.

**Marrone Bio Innovations –** *Davis, CA* **2012 – 2015**

## Associate Research Scientist

* Headed up quality control of bio-based pesticides, regulatory affairs, and R&D support and collaboration, including development and expansion of QC laboratory and troubleshooting and directing the resolution of QC method issues by fostering effective interdepartmental and cross-functional partnerships.
* Led support of R&D method development, implementation and optimization roles.
* Conducted microbiological and physical chemistry testing for product release.
* Utilized analytical assay controls and analytical chemistry methods (HPLC) for validation and troubleshooting.
* Keenly assessed commercial biologic products following cGMP regulations, regulatory guidelines and local and global quality standards, and applied CIPAC and ASTM methodology and extrapolation techniques.
* Aptly prepared reports, charts, graphs, and other vital documents for board presentations and presented QC-R&D collaboration project findings.
* Warranted GHS compliancy of safety data sheets.

**Siemens Healthcare Diagnostics –** *West Sacramento, CA* **2011 – 2012**

## Microbiologist – Quality Control

* Conducted quality control of final panel products.
* Capably assisted with routine microbiological testing, product release, and testing for validation protocols.
* Obtained, correlated and analyzed technical information needed to accomplish tasks.
* Provided valuable insight and assistance in preparing reports, charts, graphs and other documents.

**Amyris –** *Emeryville, CA* **2011**

**Research Associate – Biology**

* Worked on strain stability for leading provider of sugar cane-derived Squalane emollient revolutionizing the cosmetics industry

to hundreds of the world’s leading brands.

* Performed yeast genetic engineering, cloning and sub-cloning.
* Utilized colony PCR, a convenient high-throughput method for determining presence or absence of insert DNA in plasmid constructs.
* Conducted sequence analysis, primer design and integration design (clone manager).
* Performed strain selection and optimization.
* DNA gel Electrophoresis.

**University of California, San Francisco –** *San Francisco, CA* **2010 – 2011**

## Laboratory Assistant – Department of Pathology

* Performed *Schistosoma mansoni* and *Trypanosoma brucei rhodesiense* protease research.
* Recombinant expression of parasitic proteases for further studies.
* Proficient in DNA gel electrophoresis, SDS-PAGE and dsRNA synthesis.
* Led experimental design and optimization.

# Laboratory Skills

* Protocol design and optimization, literature research, data presentation (verbal/written), and data analysis.
* Mammalian tissue culture: bovine and human.
* Protein purification: affinity chromatography: Affi-Gel 10 / Bio-Gel P60; centrifugation and filtration.
* Protein detection and quantification: electrophoresis, staining and western blot analysis.
* Substrate specificity profiling (proteases): positional scanning synthetic combinatorial libraries (PS-SCL).
* DNA and RNA extractions, RACE PCR, PCR, electrophoresis, southern and northern blot analyses.
* Sequence determination and DNA structural analysis.
* Cloning: insertion of sequence into maintenance vectors, sequence analysis, restriction digests, and transformation for expression into *E.coli* and *P. .pastoris*.
* Recombinant protein expression: cysteine protease expression in *Escherichia coli* and *Pichia pastoris.*
* Michaelis-Menten kinetics for rate constant determination: fluorigenic substrate proteolysis detection, data collection and data analysis.

# Publications

Lucas, J.J., Hayes, G.R., Kalsi, H.K., Gilbert, R.O., Choe, Y., Craik, C.S., Singh, B.N. **Characterization of a cysteine protease from *Tritrichomonas foetus* that induces Host Cell Apoptosis**. Archives of Biochemistry and Biophysics. 2008: 477:239-243

# Education

## State University of New York (SUNY) Upstate Medical University – *Syracuse, NY* 2010

**Master of Science, Biochemistry & Molecular Biology**

**Thesis:** Characterization and Classification of a Cysteine Protease from *Tritrichomonas foetus* that induces Host Cell Apoptosis

* **Cloning**: cloning and sub-cloning, sequence analysis, restriction digests*,* transformation.
* **Heterologous Protein Expression** of cysteine proteases: expression in *Escherichia coli, Pichia pastoris.*
* **Microorganismal Culture**: *Tritrichomonas foetus, Saccharomyces cerevisiae*, *Pichia pastoris, Escherichia coli, Tetrahymena thermophila.*
* **Microbial Fermentation:** *Pichia pastoris, Escherichia coli.*
* **Protein Purification**: affinity chromatography, HPLC, centrifugation, filtration, and lyophilization.
* **Protein Detection and Quantification**: electrophoresis (SDS PAGE), staining, and Western blot analysis.
* **Substrate Specificity Profiling (proteases)**: positional scanning synthetic combinatorial libraries (PS-SCL).

## Analytical and Wet Chemistry Techniques

* **Michaelis-Menten Kinetics Analysis**: fluorigenic measurement of proteolysis, data collection and analysis.
* **DNA and RNA Extractions**: various **PCR** methods, **electrophoresis**, Southern and Northern blot analyses.

## DNA Structural Analysis

* **Mammalian Cell Culture**: Bovine and human vaginal epithelial culture and plating.
* **Microscopic Slide Preparation**: Microorganismal wet-mounts, mammalian epithelial vital and non-vital staining techniques.
* **Protocol Design and Optimization**, literature research, data presentation (verbal/written), data analysis.

**Publication:** Lucas, J.J., Hayes, G.R., Kalsi, H.K., Gilbert, R.O., Choe, Y., Craik, C.S., Singh, B.N. Characterization of a cysteine protease from *Tritrichomonas foetus* that induces Host Cell Apoptosis. Archives of Biochemistry and Biophysics. 2008: 477:239- 243

**California State University, Northridge –** *Northridge, CA* **2003**

**Bachelor of Science, Biochemistry & Molecular Biology**