

| | |
|------------------------------|---|
| PRODUCT | <i>Glycyrrhiza uralensis</i> (Chinese licorice) Root |
| PART NUMBER | 00030376 |
| REFERENCE TYPE | Biomass Reference Material (BRM) * |
| LOT NUMBER | 00030376-144 |
| COMMON NAME | Chinese licorice |
| LATIN NAME | <i>Glycyrrhiza uralensis</i> Fisch. Ex DC. [Fabaceae] |
| PLANT PART | Root |
| CDXP NUMBER | CDXA-BRM-144 |
| REPORT NUMBER | CDXA-BRMR-038-03 |
| DATE OF SAMPLE | 02/19/2007 |
| DATE OF RE-EVALUATION | 02/13/2012 (1 st); 03/16/2016 (2 nd); 10/22/2019 (3 rd) |
| DATE OF REPORT | 11/22/2019 |

*Note – Biomass Reference Material (BRM) is not a voucher specimen

ANALYTICAL RESULTS

| TEST | METHOD | RESULT |
|--------------------|------------------|---|
| Appearance | Macroscopy | (1) Whole/Cut: Small slices of root with yellow cambium and brown bark. Milled: Tan powder |
| Anatomy/Morphology | Microscopy | (1) Prisms of calcium oxalate showing distinct shape ('boat conformation') (400x) |
| HP-TLC | CDXA-TLCM-452-00 | Conforms |

STORAGE CONDITIONS

| | |
|------------------------|--|
| STORAGE | 20-30 °C; Dry storage area; Insect free; Volatile free |
| EXPIRATION DATE | 10/2024 under the above conditions |

This document is the property of ChromaDex, Inc. and/or its relevant affiliates and contains confidential and proprietary material for the sole use of the intended recipient(s). Any review, use, distribution or disclosure by or to others is strictly prohibited.

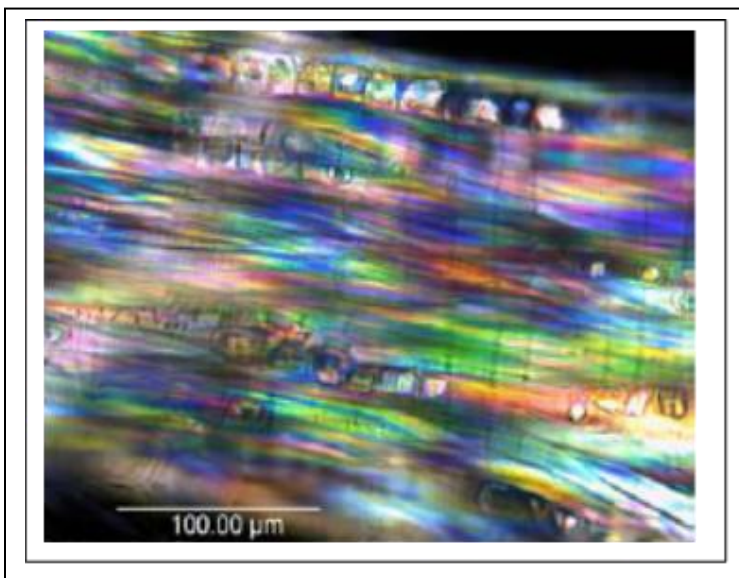
MACROSCOPY

(1)



MICROSCOPY

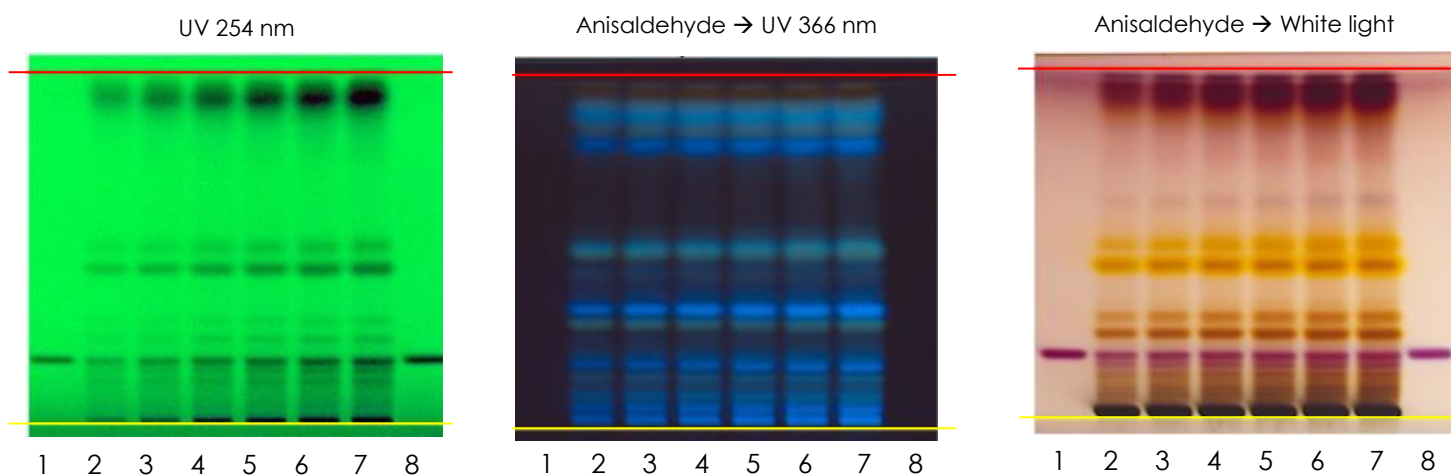
(1)



HP-TLC CONDITIONS

| | |
|----------------------------|---|
| STATIONARY PHASE | Silica gel 60, F ₂₅₄ , 10 x 10 cm HP-TLC plates |
| SAMPLE PREPARATION | 0.5 g + 5 mL methanol, sonicated in hot water bath for ~10 minutes then filtered through a 0.45 µm PTFE syringe filter. |
| MOBILE PHASE | Ethyl acetate/ formic acid/ acetic acid/ Milli-Q water [15/1/1/2] |
| CHAMBER TEMPERATURE | Ambient |
| DETECTION | (1) UV 254 nm (2) Anisaldehyde → UV 366 nm (3) Anisaldehyde → White light |

HP-TLC PLATES



YELLOW LINE = SAMPLE ORIGIN
 RED LINE = SOLVENT FRONT @ 70 mm

HP-TLC LANE APPLICATIONS

| Lane | ID | Lane | ID |
|------|----------------------------|------|----------------------------|
| 1 | Glycyrrhizic acid | 5 | Glycyrrhizia uralensis BRM |
| 2 | Glycyrrhizia uralensis BRM | 6 | Glycyrrhizia uralensis BRM |
| 3 | Glycyrrhizia uralensis BRM | 7 | Glycyrrhizia uralensis BRM |
| 4 | Glycyrrhizia uralensis BRM | 8 | Glycyrrhizic acid |

REVISION HISTORY

| <u>Revision History</u> | <u>Date of Revision</u> | <u>Document/Changes</u> |
|-------------------------|-------------------------|---|
| 00 | 07/09/2007 | New report |
| 01 | 02/13/2012 | Passed reevaluation; updated expiration date; general template update; updated method; updated TLC conditions; updated TLC pictures |
| 02 | 03/17/2016 | Passed reevaluation; updated expiration date; general template update; updated detection and method; updated TLC pictures; added revision history |
| 03 | 11/22/2019 | Passed reevaluation by HP-TLC. Updated expiration date, HP-TLC plate images, and HP-TLC conditions |

This document is the property of ChromaDex, Inc. and/or its relevant affiliates and contains confidential and proprietary material for the sole use of the intended recipient(s). Any review, use, distribution or disclosure by or to others is strictly prohibited.